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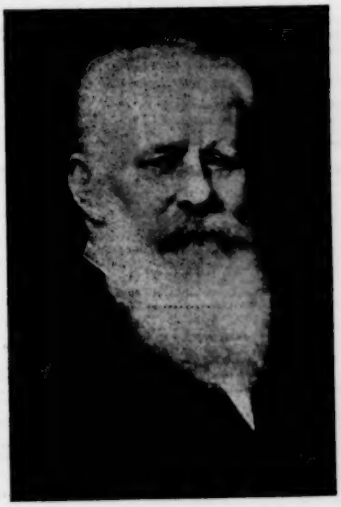

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A Clinical Lecture

ON

THREE CASES OF BANTI'S DISEASE.

Delivered at the Liverpool Royal Infirmary

BY JAMES BARR, M.D. GLASG., F.R.C.P. LOND.,

PHYSICIAN TO THE INFIRMARY AND LECTURER ON CLINICAL MEDICINE, UNIVERSITY COLLEGE, LIVERPOOL.

GENTLEMEN,—I am able to show you to-day three cases of a comparatively rare disease, and as these cases have been for a considerable time under treatment the majority of you must have had frequent opportunities of observing them. These three cases may be legitimately designated as cases of Banti's disease which is usually looked upon as a form of splenic anæmia which is not a very definite nosological or pathological entity. Very interesting papers, with a full bibliography, on Banti's disease, by Dr. W. Murrell, appeared in the *Medical Press and Circular* of Jan. 8th, 1902, and in THE LANCET of April 26th, 1902, from which we gather that there are not more than from 30 to 40 published cases of splenic anæmia. The pathology of splenic anæmia is not at all settled and there are certainly a great many varieties of disease at present classified under this generic head. As stated by Dr. Murrell, most writers on this subject use the terms "Banti's disease," "splenic anæmia," "splenic cachexia," "splenic pseudo-leukæmia," "lymphadenoma splenica," and "spleno-megalia primitiva" as synonymous. In my opinion many varieties of disease have been more or less closely grouped under these various designations, the conditions common to all being a large spleen with more or less well-marked anæmia. Professor Banti[1] of Florence described three cases of progressive anæmia. Clinically he recognised the progress of events as anæmia with enlargement of the spleen and secondary cirrhosis of the liver with ascites. There are frequent hæmorrhages, such as epistaxis, bleeding of the gums, hæmatemesis, and melæna. Pathologically he recognised fundamental and striking changes in the sympathetic nervous system. In his three cases there were found important changes, not only in the semilunar ganglia and solar plexus of the abdomen, but also in the ganglia of the neck. The changes consisted in lymphoid infiltration of the stroma of the ganglia, fatty and pigment degeneration of the ganglion cells, and a degeneration of the nerve fibres springing from the ganglia. In one case there was atrophy of the pancreas with hyperæmic spots in the parenchyma. The lymphoid changes in the bone marrow appeared to him to be such as are usually found as a secondary sequence of anæmia. The changes in the chyle and hæmopoietic organs (as the stomach, the bowels, the spleen, and the liver) had a great influence on nutrition, so that the cause of the anæmia in those cases became very apparent. He also mentioned that he had found analogous changes in other constitutional diseases—such as nephritis, diabetes, and Addison's disease. He looked upon the tumefaction or engorgement of the spleen and liver as the primary condition and the fibrosis of these organs which followed as a secondary consequence. Senator[2] considered Banti's disease as splenic anæmia with cirrhosis of the liver and he pointed out the great liability to hæmorrhages in such cases.

I shall now give you a brief abstract of the three cases which I exhibit to you to-day and we will then see how far these cases fit in with the description which has been given of Banti's disease. Some may say that the cases are not complete without post-mortem examinations, but the patients and myself hope that such an event may be long deferred. The physical and pathological conditions of the patients are, however, so apparent that there can be no difficulty in arriving at an accurate conclusion as to the morbid anatomy of their viscera. It is true that we cannot tell what changes, if any, have taken place in the sympathetic nervous system, but the state of the circulation points to a paretic condition of the whole splanchnic area in each of the three cases, and I look upon this as an important determining factor in the causation of the disease.

CASE 1.—The patient, a carter, aged 48 years, was first admitted on August 12th, 1901, in a very precarious condition. He stated that he had always enjoyed good health up to four years previously, when he met with an accident which injured his abdomen. After this he noticed some swelling, but it did not incapacitate him from work. In June, 1901, he strained himself lifting heavy weights, and after that the swelling of the abdomen became more marked and about the end of July he had to give up work. For 20 years he drank rum and other spirits, but he did not acknowledge to any great excess. He had epistaxis and hæmatemesis on several occasions. On admission he presented the appearance of a man who was suffering from cirrhosis. His dark, sallow, somewhat icteric appearance, injected malar capillaries, shrivelled skin, attenuated extremities, and emaciated frame with large abdomen, all pointed to portal obstruction. His spleen was enormously enlarged, filling the greater part of the left half of the abdomen. The liver was large, firm, and irregular on the surface, and the abdominal cavity was distended with fluid; on two occasions 80 and 134 ounces of clear ascitic fluid were drawn off. There were mitral and tricuspid systolic murmurs with pulsation in the liver and veins of the neck. Friction fremitus was felt all over the abdomen and the fluid did not reaccumulate. He was kept on a dry diet and given salol and digitalis. His spleen diminished much in size, his general state greatly improved, and he was discharged in fair condition on Oct. 16th, 1901.

He was readmitted on March 24th, 1902, in a very weak condition, suffering from dyspnœa, cough, and profuse expectoration of frothy mucus. The skin was of a dirty sallow, yellow colour, and was loose and shrivelled, the conjunctiva had an icteric tinge, there was no subcutaneous fat, the abdomen was much enlarged, and both legs were œdematous. The left pleura was full of fluid and soon afterwards 88 ounces of serous fluid were withdrawn. The heart's action was feeble and the mitral and tricuspid valves were incompetent. The blood-pressure was low. An examination of the blood by my house physician, Dr. J. C. Mann, showed hæmoglobin, 40 per cent.; red cells, 2,400,000 per cubic millimetre, and white cells, 5000 per cubic millimetre. The circumference of the abdomen was 41 inches, the abdominal veins were much distended, the liver was large and irregular on its surface, and the spleen was enormously enlarged, extending nearly down to Poupart's ligament and about three inches to the right of the mesial line; the surface was smooth and two large notches about four inches apart could be readily felt. You can feel the same condition in the present day, though the spleen is somewhat smaller. He was put first on a terebene mixture and afterwards on one of perchloride of iron and chloride of calcium. On April 11th Dr. Mann's examination of the blood gave the following result: hæmoglobin, 65 per cent.; red cells, 2,560,000 per cubic millimetre; and white cells, 8000 per cubic millimetre. A differential count of the white cells gave the following result: large hyaline, 44 per cent.; lymphocytes, 20 per cent.; finely granular oxyphiles, 35 per cent.; and eosinophiles, 1 per cent. The red cells were normal in shape and size. During the patient's previous residence in the infirmary his temperature was subnormal throughout, but on this occasion there has frequently been an evening rise to 100° F.; in the morning it is usually subnormal. He has recently gained a little flesh and now weighs nine stones and six and three-quarter pounds. He has steadily improved in general condition, and is now able to get about. His chest is quite clear, the heart's action is stronger, and he looks much better. His spleen is somewhat smaller, but it is still very large; it measures 16½ inches by 13 inches, and, I should say, weighs over eight pounds. His liver is still rather large but it does not pulsate. Dr. R. E. Kelly, my present house physician, has recently made an examination of the patient's blood with the following result: erythrocytes, 5,000,000 per cubic millimetre; leucocytes, 12,500 per cubic millimetre; hæmoglobin, 60 per cent.; hæmoglobin value of each corpuscle, 60 per cent. His cardiac area is small, the deep dulness extending one and a quarter inches to the right and three and three-quarter inches to the left of the mesial line. At the apex the first sound is dull and murmurish, the second is clear but not accentuated. At the aortic area there are a systolic murmur and a clear second sound. At the tricuspid area the first sound is followed by a short systolic murmur and a clear second

[1] Contributo allo Studio delle Anemie Progressive; Anæmia Ganglionare (Florence, 1881).

[2] Berliner Klinische Wochenschrift, vol. xlvi., 1901.

sound. There is systolic pulsation in the veins of the neck. The blood-pressure is low; with Hill and Barnard's sphygmometer the pressure in the brachial artery is, in the recumbent posture, mean 100 millimetres of mercury; obliterating pressure 150 millimetres of mercury. In the sitting posture mean is 110, and the obliterating 160, millimetres of mercury. In the illustration (Fig. 1) the outline of the patient's spleen is traced.

FIG. 1.

From a photograph of the patient in Case 1. The outline shows the size of the spleen.

CASE 2.—The patient, a male, aged 42 years, has been a cotton porter for the last five years, and a coal miner previously to that, which was evidenced by the whole of his skin being studded with particles of embedded coal-dust. He was admitted to Mr. F. T. Paul's ward on Nov. 2nd, 1901, on account of Morton's disease, but Mr. Paul did not think him a fit subject for operation and he was transferred to my male ward on Nov. 16th. It was then evident that metatarsalgia was only a minor part of his ailment. About 20 years ago he met with an accident to his spine in a coalpit, and the spines of the lumbar vertebræ are now very prominent. Five years ago he vomited blood, and again in May, 1901, he had such a severe attack of hæmatemesis that he was unconscious for a couple of days. He thought that he vomited about two quarts. In Mr. Paul's ward he had another attack of hæmatemesis; this and his appearance led at once to the investigation of his liver for cirrhosis, though he said that he never drank more than a pint of beer daily. He presented a distinctly sallow, icteric tinge with large malar capillaries, loose shrivelled skin, considerable emaciation with absence of subcutaneous fat, large abdomen, but no ascites. His lips were dry; his teeth were good and were covered with sordes; his tongue was dry, brown, and tremulous, and the anterior half was rather denuded of epithelium; his gums were soft and spongy and bled readily; and he suffered from thirst; his stomach was not enlarged and he had no pain after food. His liver was large and irregular on the surface. His spleen was large and the notch was easily felt. The area of the heart was increased; to the right there was a tricuspid systolic murmur. The blood count gave hæmoglobin 30 per cent. and red corpuscles 5,000,000 per cubic millimetre; the white cells were not counted but there were about an equal number of mononuclear and multinuclear cells. The lungs were normal. The urine amounted to 41 ounces; it was highly coloured and had a specific gravity of 1014; a slight trace of albumin and bile was present; urea, 2·5 per cent. There was considerable pain at the distal end of the fourth metatarsal phalanx of the right foot; the knee-jerks were present but were not well marked. There was slight swelling of both feet and in the right knee-joint. The pain in the right foot was so severe as to keep him awake at night. Dr. Mann examined the blood on April 12th and found hæmoglobin 56 per cent. and red cells 6,000,000, and white cells 12,000, per cubic millimetre. Again, on April 13th the blood count gave hæmoglobin, 65 per cent.; red cells, 6,500,000 per cubic millimetre; and white cells, 16,000 per cubic millimetre.

The progress in this case has been very slow and the patient has had a great variety of symptomatic treatment which I will try to summarise. The pains in the feet have given rise to a great amount of trouble. Very soon both feet became involved, and they were so exquisitely tender that he could scarcely bear to have them touched; they were much swollen, red, hot, and tender and he could not bear to have them depressed. The pain was equally severe in both feet and was not confined to any particular spots, though the greatest pain was caused by lateral pressure on the distal ends of the metatarsal bones. It was evident that we had a severe case of erythromelalgia of both feet. For this pain morphia and Dover's powder were administered internally and various liniments externally. He had electric foot baths and his feet were immersed for hours daily in very hot water which seemed to do good, but what has really enabled him to get on his feet has been wrapping them in cottonwool and then applying tightly over this an elastic bandage. The good effect of this is very apparent when you now see him walking about in his bandages, whereas a short time ago his feet had to be elevated about 18 inches above the rest of his body in order to afford him some relief. For the pain and swelling in his knee and ankle-joints iodide of potassium and salicylate of sodium were given. His spongy gums, raw tongue, and pharyngitis gave some trouble but were relieved by the local application of nitrate of silver and the internal administration of lime-juice and cream of tartar. As general tonics he has had strychnine, digitalis, quinine, and hydrochloric acid. Since April 12th he has been taking with advantage a mixture of the perchloride of iron and chloride of calcium. His diet throughout has been light and nutritious and rather dry. He is now much better and is able to get about. His digestive organs are in a fair condition; his liver and spleen are much smaller, though both are still much larger than normal. The spleen measures 10 by five and a half inches. There has been no ascites; his urine is now normal. His heart is fairly normal and is now without any tricuspid regurgitation, there is still pain in his feet and I am afraid without the bandages he would not be able to get about. His temperature has been subnormal throughout. The peculiar condition of his blood, showing an excess of both red and white cells, may be partly due to his dry diet and the limited amount of fluid in his tissues. At present the area of the heart is rather small, the deep percussion extending one and a half inches to the right and four inches to the left of the mesial line. The sounds are sharp and clear and free from murmur. The blood-pressure in the brachial artery with Hill and Barnard's sphygmometer is, in the recumbent posture, mean, 96 millimetres of mercury, and the obliterating pressure is 136 millimetres of mercury; in the sitting posture it is mean 100, and obliterating pressure 146, millimetres of mercury. Dr. Kelly's examination of the blood gives the following result: erythrocytes 7,000,000 per cubic millimetre; leucocytes, 13,000 per cubic millimetre; hæmoglobin, 70 per cent.; hæmoglobin value of each corpuscle, 50 per cent. The patient's gums are still very spongy and his tongue is red and raw. His lips and finger-ends are of good colour. The tip of one of his toes is gangrenous, not an uncommon event

in erythromelalgia. A reproduction of his photograph is appended. (Fig. 2.)

CASE 3.—A man, aged 38 years, was admitted under the care of Mr. Paul on June 14th, 1901, for a large tumour in the left hypochondrium. Mr. Paul explored and found a large vascular spleen which bled profusely on the slightest handling. The liver was found to be rather large and smooth, but otherwise it was normal. The wound was closed and when it had healed the man was transferred to my ward on July 12th.

FIG. 2.

From a photograph of the patient in Case 2. The outline shows the size of the spleen.

About five years ago when jumping a hurdle he caught his toes and fell violently forwards, hurting his chest and abdomen. He was then in bed for two weeks. After this he continued fit for work but during the last six months he had lost a stone in weight. About seven or eight weeks ago he first noticed severe pain in the cardiac area shooting across from nipple to nipple. After food this pain became localised in the epigastrium. There was no vomiting and his bowels were very constipated, there being five or six days between the movements; lately there was melæna. His condition when in my ward may be summarised as follows. On admission he was so extremely prostrate and his blood-pressure was so low that even propping him up in bed made him feel faint. He was much emaciated and rather anæmic, his skin was loose and dry, with no subcutaneous fat, he had a slight icteric tinge of the conjunctivæ, the mucous membrane of the mouth was of a dark red colour, and the tongue was red and denuded of epithelium. The area of the heart was small; the sounds were short and clear, the first sound being accompanied by a systolic murmur at the apex. Dr. Mann's examination of the blood showed 2,800,000 red cells and no excess of leucocytes. The lungs were normal. The abdomen was much distended. The spleen was very much enlarged, filling the left hypochondrium, lumbar, and left half of the umbilical regions. Hepatic dulness measured three and a half inches in the nipple line, and the lower border, which was sharp and smooth, could be felt below the costal margin. The urine was normal. He was put on a light diet, had a mouth-wash of carbolic acid and formaldehyde, salol internally, and occasionally a dose of calomel. About a fortnight after admission his spleen began to shrink, but his abdomen filled with fluid. Between that time and the end of October he was tapped nine times, the average amount drawn off being 264 ounces. On August 10th 44 ounces of sanious fluid were drawn off from his left pleura, but a second operation was not required. Friction was heard and felt and eventually the pleural surface became adherent.

It was necessary to settle the question of tuberculous peritonitis and accordingly some of the ascitic fluid was injected into a guinea-pig at the Thompson-Yates laboratories but with a negative result. By the end of October he had improved very much in general condition and the spleen had shrunken so that it could only be felt below the costal margin. I thought it useless to continue the tapping, so I sent him back to Mr. Paul with the view of having his abdomen drained. Mr. Paul operated on Nov. 4th and left the drainage-tubes in for about 10 days, but when they were removed the wound healed and the fluid reaccumulated. He operated again on Jan. 2nd, 1902, and drained until the 17th. At each of these operations it was noticed that the parietal peritoneum was extremely vascular, but the visceral layer was an opaque white, very like the condition of leucoplakia. After the last operation numerous adhesions took place and the right half of the peritoneal cavity was practically obliterated. On March 6th there was a large loculated collection of pus in the left hypochondrium and lumbar regions. Mr. Bickersteth operated for Mr. Paul; this abscess was thoroughly drained until April 15th. The wounds have healed for some time and he has now returned from the convalescent home.

The following note was made on May 22nd: "Great improvement has taken place in the condition of this patient. He can now get about and attend to his business. He enjoys his food but occasionally after meals he feels uncomfortable and distended with flatus. His legs occasionally swell in the evening. The right radial artery with Oliver's arteriometer measures in the recumbent posture 3·3 millimetres; in the erect posture it measures 2·8 millimetres; with Hill and Barnard's sphygmometer the blood-pressure in the brachial artery in the recumbent posture is mean 102 millimetres, obliterating 156 millimetres; in the erect posture it is mean 98 millimetres obliterating 152 millimetres of mercury. The cardiac area extends two inches to the right and four and a half inches to the left of the mesial line. The apex beat is situated in the fifth interspace, gently heaving. The first sound is dull at the apex, followed by a short second sound. At the tricuspid area the first sound is dull but no murmurs are present. At the base the second sound is double, the final element being pulmonic. The veins of the neck are somewhat distended when he is lying down and show slight systolic pulsation; they empty with inspiration. There are a few harsh sonorous râles over the chest. The expansion of the left side is not quite so good as on the right side and the left intercostals are drawn in during inspiration; the percussion note throughout is good. At the base of the left lung the vesicular murmur is rather defective. Hepatic dulness extends to the costal margin and measures four and a half inches in line of the nipple and five and a half inches in that of the axilla; on deep inspiration the edge of the liver feels smooth and rounded. The spleen fills the greater part of the left hypochondrium and forms an irregular oval measuring eight inches by six inches; the lower margin, which extends about two inches below the border of the ribs, is felt to be hard and firm with smooth surface. The rest of the abdomen is tympanitic but a diffuse thickening is felt all over, evidently due to peritoneal adhesions. There are four scars at the site of the old operation wounds. The circumference at the level of the umbilicus is 35 inches. The tongue is clean, the mucous membrane is rather purplish and congested, the gums are spongy, the malar capillaries are rather large, and the ears are congested and feel cold. The blood-count was

as follows: hæmoglobin, 85 per cent.; red corpuscles, 5,120,000 per cubic millimetre; white, 11,560 per cubic millimetre; polynuclear cells, 72; lymphocytes, 18; eosinophile, 7; and hyaline, 3 per cent. The temperature in this case was subnormal except on a few occasions, when it reached 99·2°; there was usually a range of one to two degrees between the morning and evening temperatures."

This man on admission was decidedly anæmic and Dr. Mann on one occasion found that his red corpuscles only numbered 2,800,000 per cubic millimetre with no excess of leucocytes, but examinations of his blood were not made regularly, as during the early period of his residence in hospital, before I had had an opportunity of seeing his peritoneum, I looked upon the case as one of chronic tuberculous peritonitis with an enlarged spleen. The occurrence of sanious fluid in the pleural cavity supported that view as cases of polyomenorrhitis are nearly always tuberculous. After an examination of the peritoneal cavity and its contents and watching the progress of the case that view was set aside and I have placed the case with the other two as one of Banti's disease. If this view be correct the present condition of the patient shows that Banti's disease is not necessarily fatal but even capable of being practically cured.

We can now compare these three cases. They are all males, aged respectively 48, 42, and 38 years. Each one met with a more or less serious accident to his abdomen some years before the occurrence of the present disease. There is nothing in the family history of any of them which could have any bearing on the disease. They have never been out of this country. There is no history of syphilis in any case; the first man may have taken more alcohol than was good for him, but there is no such history in either of the other two cases. The blood-pressure was low in all the cases, this no doubt being due to vaso-motor paresis of the splanchnic area, and it was so very low in the third case that for a long time the foot of his bed had to be raised in order to maintain his cerebral circulation. This lessened peripheral resistance in each case led to more or less cardiac atrophy and in no case is the heart of such size and power as would be required by a labouring man. The abdominal viscera in each case have been engorged while the vessels of the rest of the body have been comparatively empty. The skin has been loose and shrivelled, there has been almost complete disappearance of the subcutaneous fat, and the muscles have been atrophied. In none of the cases was there such partial obstruction as would account for these latter phenomena. In all the cases there has been a low form of chronic peritonitis with marked friction fremitus, but without any febrile temperature. In Case 1 and Case 3 there were ascitic and pleural effusions, but the complete disappearance of the fluid in the first case after a couple of tappings showed that the ascites was not due to the cirrhosis, and in the latter case at the operations the liver was found to be fairly normal. In Case 2 the albuminuria indicated renal engorgement and the well-marked erythromelalgia of both feet showed further vaso-motor paresis. The three spleens are now very firm and no doubt undergoing fibroid changes. In Case 3 the great enlargement at first was simply due to engorgement, as evidenced by the great shrinkage which has taken place. The spleen is normally a very spongy organ and capable of great variations in size. It is also, as Dr. William Hunter has well shown, a blood-destroying organ, and during the early stage of engorgement this function would be increased and the excessive hæmolysis would lead to the anæmia which is such a distinctive feature of the disease. When the fibrosis is well established the hæmolysis would diminish and might reasonably be supposed even to sink below normal; that such has here happened is shown by the increase of erythrocytes in Case 2 to 7,000,000, in Case 1 to 5,000,000, and in Case 3 to 5,120,000 per cubic millimetre.

In all these cases there was marked oligochromæmia. In the early stages there were considerable diminution of the erythrocytes without any alteration in their size or shape and no excessive leucocytosis. The great diminution in the red cells referred to by Dr. Murrell would seem to be no necessary part of the disease but would rather tend to show that such cases should be grouped with those of pernicious anæmia. If my view of this disease be correct then it is highly probable that the primary reduction may eventually end in an excessive number of erythrocytes if the patients live long enough.

In my male ward you will at present find an extreme case of pernicious anæmia where the red cells number less than 500,000 in the cubic millimetre. In these cases, especially in Case 2 and Case 3, there has been a pronounced hæmorrhagic tendency. In Case 1 and Case 2 there is distinct cirrhosis of the liver without any marked portal obstruction. If there be yet any cirrhosis in Case 3 it must be slight.

I now show you a patient suffering from alcoholic hepatic cirrhosis who has been tapped many times in order that you may compare him with the other three patients. In his case there is no marked enlargement of the spleen, and although in such cases there is usually cardiac asthenia with incompetence of the tricuspid valve, yet there is no such fall in the peripheral blood-pressure as that which occurred in the cases which I have been describing. I had also recently in my ward a well-marked case of leucocythæmia who has greatly improved and is now an out-patient. You will find his spleen very large, firm, and smooth, but an examination of his blood at once places the case in a different category.

In Case 2 the slight icteric tinge and absence of ascites may raise the question of biliary or hypertrophic cirrhosis of Hanot, but in that disease the jaundice is much more pronounced, there is more or less febrile disturbance, and marked leucocytosis; the liver and spleen are both enlarged but the liver is smooth on the surface and the cirrhosis is monolobular. In this case the spleen is greatly enlarged, the liver is large and hob-nailed on the surface, so the cirrhosis is of the multilobular variety. There have been no fever, no leucocytosis, and no marked jaundice.

In conclusion, I may say that my view of Banti's disease is that it is probably due to a vaso-motor paresis of the splanchnic area, either in whole or in part, and that this paresis arises from disease of the visceral sympathetic ganglia. As a consequence there is great engorgement of the abdominal viscera, especially of the spleen and liver, increased hæmolysis, with consequent oligochromæmia and oligocythæmia. The increased blood-supply to those organs eventually leads to fibrosis and lessened function. The peritoneal effusion when it takes place would seem to be due to vascularity rather than portal obstruction. The paresis leads to retention of blood in the portal area with lessened supply to the rest of the body, fall in the general blood-pressure with lessened work for the heart, impairment of nutrition, and muscular atrophy. The digestion is usually impaired, there is apt to be an increase of toxins in the intestinal tract, with further aggravation of the mischief. The engorgement of the viscera and mucous membrane generally is a frequent source of hæmorrhage.

Splenectomy has been recommended and, I may add, practised as the best method of treatment for this disease. It may be an excellent treatment for the disease, but in every case you have got to consider the patient rather than the disease. In Case 1 and Case 3 such a procedure would certainly have proved fatal and in Case 2 the spleen at present is not sufficiently active and therefore I cannot see the *raison d'être* for its removal. I do not think in his case that it would be fatal, but it might set up in time leukæmia which would be as difficult to treat as his present illness. We may try something to assist the spleen and to increase the hæmolysis. We must get beyond the spleen, we must try to reach the nerves and ganglia which supply the spleen and other viscera. We must as far as possible raise the general blood-pressure, improve the nutrition, and keep the intestinal tract as antiseptic as possible. For the latter purpose I prescribe salol, benzo-naphthol, and an occasional saline purge; for the former such drugs as strychnine, digitalis, quinine, and caffeine are useful. I am fond of the perchloride of iron with chloride of calcium as a good hæmatinic and vascular tonic, and it also lessens the liability to hæmorrhage. I have not tried arsenic systematically in these cases, as on *a priori* grounds I did not expect any benefit from its use. In the first two cases I am at present trying suprarenal capsules. Of course, in the early stage the patient should be kept in bed. It is probable that a large elastic abdominal belt firmly applied would do good.

The diet should be light, plain, simple, and easily digested, such as peptonised bread-and-milk, raw eggs, milk puddings, bread-and-butter, fish, chicken, mutton broth, ripe fruit, tea, coffee, and milk. As there is not so much obstruction to the portal circulation in the liver as in an ordinary case of cirrhosis there is not the same necessity for limiting the quantity of fluid drunk. The following jelly I find an agreeable method of introducing chloride of calcium into the system. Take about an ounce of gelatin, the juice of one lemon, from two to four drachms of chloride of calcium, and

one pint of hot water. Dissolve the gelatin, &c., allow to set, and it is then ready for use.

For the ascites Dr. Murrell recommended the operation of epiplopexy. In Case 3 drainage as carried out by Mr. Paul answered admirably and I think in the majority of such cases is likely to do better than epiplopexy. In these cases there is not very great obstruction to the portal circulation and so no great necessity for establishing a collateral circulation. You want rather to abolish or to limit the secreting surface. I think that cases curable by epiplopexy can be cured by simpler means. The treatment in these three cases has been to a certain extent successful and I hope by attention to minute details that further improvements will take place.

Note (August 12th).—Cases 1 and 3, when last seen, were in very fair condition. Case 2 is still in the infirmary suffering from gangrene of several toes in connexion with his erythromelalgia.

An Address
ON
HEART DISEASE IN CHILDREN.

Delivered at the Manchester Children's Hospital, Pendlebury, before the Society for the Study of Disease in Children,

BY A. E. SANSOM, M.D., F.R.C.P. LOND.,
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MR. CHAIRMAN AND GENTLEMEN,—In the first place I have not a paper to read; I have only a few remarks to make. Some of us are pretty well accustomed to "a few remarks" and they may be agreeable or they may be otherwise. But I have a very agreeable task in the first place, and that is to thank the authorities of this Pendlebury Hospital, especially our chairman (Dr. H. Ashby), on this occasion, whom all revere, and for whom we have a very great affection, for their goodness in allowing us to come here and to see the wealth of material which they have. It is all very well to make apologies for the wards, but it seems to me there is no place in the whole country—or I think I may say in any other country—in which disease in children is better to be observed, and is better observed and studied, than here. And let me say on the part of the members of our society that it is not only honoured but it honours the place. The society is founded upon the best principles, I believe, and I think the title is one that is worthy of all commendation. There is no glamour about it; it is a "Society for the *Study* of Disease in Children"; and it is upon those lines that I have to make a very few remarks before the meeting upon heart disease in children.

When we look over the great realm of children's diseases, and when we narrow our view to the question of organic heart affections in children, I should say that in the enormous proportion it is the *rheumatic* heart which we have to deal with. It is quite true to say that, in children especially, we have to consider anomalies and malformations. But even when we do consider malformations of the heart, which we do not hear of so much in adults, because, unfortunately, life is not preserved long enough, we find in a very large number of cases—and especially do those find it who, like Dr. Theodore Fisher, study it in the post-mortem room—that there is not infrequently superadded to it a form of disease essentially of a rheumatic nature, that is, so far as we have morbid anatomy to guide us. And that is no original observation. It was made by Dr. T. B. Peacock in the very early periods of investigation on the subject. So that even when we have malformations to consider we have the superaddition of rheumatic troubles to think of also. And then in any case in children where the question of congenital anomaly comes in, we have to think whether that seemingly congenital anomaly is due to intra-uterine endocarditis or whether it is due to congenital malformation. Now, there is such a thing as congenital endocarditis. That I have proved myself and I know many others have clearly proved it also. It becomes us, therefore, to question in any case of seeming congenital anomaly whether there is not also a question of congenital endocarditis in the case.

In this communication I propose to consider only the following groups of what I will call the chief condition of heart disease in children, the rheumatic heart of childhood. The congenital anomalies I shall not consider at all; they are too rare for my present subject. I shall only consider the more common forms of heart disease in children. Those more common forms I would classify as examples of the *rheumatic heart*. Now, the groups, varieties, and phases of the rheumatic heart which I propose to consider are, (1) the temporarily swollen or enlarged heart of rheumatism; (2) the heart of rheumatic pericarditis; (3) the heart of rheumatic endocarditis with resulting valvular disease, severe or extensive; and (4) the heart of slow, insidious endocarditis inducing mitral stenosis. By "rheumatic" I mean a morbid condition in strict relation with my conception of the rheumatic process, the phenomena of true rheumatism. I do not consider any specially painful implication of the joints to be necessarily an index of this condition. It may be strange to say that rheumatism is not essentially a painful disease, but that is my deliberate conviction. The arthritis of true rheumatism is certainly very painful in some cases—painful while it lasts; but it is singularly controlled and influenced for good by medicines such as salicin and the salicylates, and very rarely lasts more than a fortnight. At the end of that time the pains and swellings of the joints disappear, leaving no permanent morbid changes, though there may be, and often are, waves or storms of recurrence. There are many cases of arthritis which are not rheumatic. I am of opinion that osteo-arthritis, so-called "rheumatic gout," is dependent in many cases upon infections which have no relation with rheumatism; that the morbid changes in this disease are more permanent, the pains are much more severe and protracted, and the resulting deformities are more significant than in the case of true rheumatism.

Now here I must just call your attention to somewhat of a rarity, that is to say, osteo-arthritis in children, and the lessons which I think it teaches us. It may be remembered—and you will see it in the published volume of the reports of this society—that I brought forward a case of osteo-arthritis in a child. It was in a boy aged 11 years. The disease does not occur generally at a very early age. The joints in that case were swollen, nearly all the large joints were involved, and it was very long lasting—six months under our own observation. There was a little improvement under massage, and so on, but not very much. It did not comport itself in the way that I think is usual in acute rheumatism generally. Acute rheumatism in the child is evidenced mostly by rise of temperature, by painfulness which may be very slightly marked in a few joints, by anæmia, by skin troubles of certain forms (especially erythema), by "peliosis rheumatica" as it is called (purpura), and sometimes by urticaria. It is very doubtful whether other forms of erythema, like erythema nodosum, are associated with rheumatism. I do not think that erythema nodosum has anything to do with rheumatism, but at any rate rheumatism is attended by some skin affections and by rises of temperature. But in childhood, as I need not say to members of this society who have plenty of opportunities for investigation, we find that the heart phenomena—not complications—of rheumatism are very much to the fore, that there may be pericarditis, there may be endocarditis, and there may be the swollen heart of rheumatism, without any signs to show that there are arthritic phenomena present. They exemplify a form of rheumatism, a very marked phase of the rheumatic process in the child, without the intervention of arthritis to interpret it as rheumatic. Therefore it does not do for us to take arthritis as an index of rheumatism.

There are other things which come before us so markedly in child's rheumatism. To come back to this case which I spoke of and its lessons there were very marked painfulnesses, lasting at least for six months, and very marked deformities. Twelve months later I had the opportunity of seeing the child again, for he has been under my care for a considerable time. The characteristic lessons, I think, are these: that the arthriticism, the arthritic conditions, are much less, but the wasting conditions are very marked indeed. So marked is the wasting of muscles and the deformities which result from the wasting of muscles that I have been able to base some remarks to my clinical clerks and house physicians upon them and to say in some cases—I say it now with plenty of opportunity of correction, because I know very well that you will correct me if you think I am

not right—that some cases of this form of arthritis are non-rheumatic, and that in some the arthritis is in excess of the neuritis and in others the neuritis is in excess of the arthritis. This boy has no cardiac lesion nor any approach to one. The form of arthritis of which I speak is not rheumatic, according to the best of my knowledge and belief. Sometimes the arthritis is more pronounced than the nerve phenomena, sometimes the nerve phenomena are more severe than the joint phenomena, and it is a question very often of the preponderance of the one or the other. In the so-called "rheumatic gout" of children there may be very much destruction and alteration of joints or there may be very little alteration of joints, and yet there may be a great deal of wasting owing to nerve causes. I have had some photographs and radiographs taken of this case and they will compare with those which are in the former volume of our Transactions. I think the radiographs show that the chief signs are in the feet and that the swellings which were about the joints, as shown by the radiographs, are very much less, whereas the deformity and wasting are still very marked indeed, although less in the hands than formerly.

To come, then, to our former topic, the rheumatic heart of childhood, this is essentially a rheumatic phenomenon, and it very often is not to be interpreted by any form of arthritis at all. The heart of osteo-arthritis is a very irritable heart, sometimes inclined to quicken, sometimes inclined to be slow, and sometimes to be irregular. But it is not associated with any organic disease of rheumatic type.

And now you may say that I have been labouring rather to show that the common notion of taking arthritis and painful joints as signs of rheumatism is not a justifiable thing and that we who study disease in children are essentially disposed to combat that usual notion so prevalent amongst the public—and I may say those members of our own profession whose practice does not lie so very much amongst children. Rheumatism is not essentially a joint process; it is only adventitiously a joint process.

I will now briefly refer to the first group which I have mentioned, of the truly rheumatic heart in children; and I will say that, so far as my own experience goes, it entirely endorses the observations of my friends Dr. D. B. Lees and Dr. F. J. Poynton who have shown that in child rheumatism as well as in the rheumatic fever of adults the heart may be temporarily enlarged. I have frequently found that to be the case in the wards and I have demonstrated it. I do not think you want any very severe or unusual processes to demonstrate that—your own fingers are the best thing. The first point is to find out where the pulsations of the heart are to be felt. If they are to be felt outside the normal position, to the left or to the right, you make a note of it. Then I agree with Dr. Lees that when you have found the points where the beat is felt (I do not like the term "diffuse beat")—when it is felt at more than one interspace—you can reckon that the ventricle extends at least a finger's breadth outside that, and you may use percussion to determine that enlargement with very great advantage. But when it comes to the question of the mode of percussion I do not think I quite agree with Dr. Lees in thinking that the finger of the observer is the very best method. I think that it is the best as a percusser but not as a pleximeter; but you must remember that I am a little biased, for I like my little pleximeter best because I think it gives the most accurate results, as did Piorry. I was a pupil of Piorry many years ago—he has been dead for some years—and he used to say, and I thought then with a very good show of reason, that the soft cushion of the finger does not give you as good results as something which is rigid and which therefore shows the vibrations better. I think that he was right. I agree with Dr. Lees in the main and these are only observations, perhaps a little outside the practical. If you find by means of the finger the point of extreme pulsation and then apply your finger outside you get very fairly the outline of the enlarged heart—that is to say, one finger's breath away. That it is enlarged in rheumatism I entirely agree. It may be temporarily enlarged and then in the course of 24 hours it may recover. Or it may take several days to recover; in fact, it goes through the phases of an ordinarily enlarged and swollen joint, according to the best of my knowledge and belief. That sometimes occurs in pre-existing disease of the heart, and sometimes in a sound heart, and the subjects of that heart have no distressful symptoms or need not have. The heart, according to some members of our profession and according to some observers, is dilated. Well, I agree that it may be so. But why is it dilated? Is it dilated because there is any particular form of myocarditis? I do not think so. I am sorry to confess, as this is a society for the study of disease in children, that I know very little, or even nothing, clinically, about myocarditis. We read of myocarditis, but I do not know of any clinical sign by which I could determine that there was myocarditis. I do not know even whether in these cases there may be any degeneration as a consequence of such myocarditis. I should think not, because the heart resumes its normal size and shape so readily and quickly. What do I know about it? The opinion which I recorded many years ago in my "Lettsomian Lectures" is that the heart is *infiltrated* under such circumstances; and I demonstrated that it is infiltrated. Therefore I should say—and I think that Dr. Fisher, who has written on this question an exceedingly good paper in THE LANCET,[1] is of my opinion and that Dr. Lees and Dr. F. J. Poynton and Dr. Payne are also of my opinion—that there is something which enfeebles the heart, but it is not of the nature of the ordinary form of inflammatory trouble or degeneration; it is an infiltration which cripples the heart.

If that is so, let us think to what very important points it leads us. It is that the dilatation of the heart is not an unusual phenomenon; it is a fairly common phenomenon. If Dr. Lees is right—and I think he is—it occurs almost invariably in any form of rheumatic disease of the heart. But the heart enlarges without any particular sign as regards the patient and by-and-by it gets normal again. Well, those observers who hail from Germany tell us that dilatation of the heart is such a fearful thing that it has to be observed by the nurses every hour and tested by the sphygmograph, and the patient's attention must be constantly directed to it. But it seems to me that that is very unreasonable, inasmuch as the change is not accompanied by any special signs, and the patient makes a very good recovery in a considerable number of cases, though not in all. But even supposing that there is a heart already diseased, the temporary dilatation that accompanies the rheumatic process does not make a great deal of difference unless the disease within the heart increases, and that it very often does, from pericarditis or endocarditis, or both. But I do not think we may say that dilatation of the heart, as such, is a thing of the greatest immediate consequence and of the significance which we have been told. And I may go further and say that dilatation of the heart, in some cases even of valvular disease, is a very good thing. For example, if you find a crippled mitral valve, a regurgitant condition of mitral insufficiency, it is a very good thing to have some dilatation of the left ventricle. You would not get compensation unless you had. In such a case the left ventricle drives some of the blood back into the left auricle and does not send so much into the aorta, but fails by-and-by, in the process of time, to send sufficient for the nutritive needs of the organism. It must therefore hold more, and to hold more it must be dilated. Therefore I do not think that we can agree that dilatation is *always* of the severe and grave significance that some people think. I quite agree that in aortic disease painful conditions occur and that there may be something of distension of a serious kind in that condition, but in the great majority of cases the dilated heart is not of necessity of the significance that some people have made out.

So much for polemics. I have already said that the heart of rheumatism is a heart that enlarges, and rheumatism in all its forms is a dangerous thing as regards the heart and produces organic disease, but the rheumatic gout or osteo-arthritic form is not productive of any disease of the heart but brings about an over-sensitiveness of the nerve mechanism of the heart.

The heart of rheumatic pericarditis I have not time to consider now. With regard to the heart of rheumatic endocarditis, with increasing valvular disease, we know the extreme significance of that, and the heart of slow and insidious rheumatic endocarditis inducing mitral stenosis. This latter I think I should say a few words upon because it has been a subject of very long study with me. The disease known as mitral stenosis is a very subtle one—so subtle that, as I have said before, it has been considered to be a form of congenital anomaly. It may occur in intra-uterine life; it is quite free from symptoms in its origin and progress; and it is generally only when the child is from 7 to 12 years of age that it becomes strongly marked and is detected.

[1] THE LANCET, June 7th, 1902, p. 1594

The smoothness of the funnel-shaped mitral valve has sometimes suggested that it is a congenital anomaly, but I believe that it is not so. The disease, I think, is rheumatic, and only rheumatic, because I have seen those cases ultimately, in the course of time, develop true and undoubted rheumatism, though some observers, especially French, have thought, from the insidious character of it, that it is not rheumatic *ab origine* but tuberculous. I think that there is no such likelihood. I think that it is rheumatic but very gradual in onset and in progress.

I have endeavoured to bring before you what my conception of rheumatism with regard to the heart is. That opinion is not worth much, only in so far as you endorse the opinions which I give and submit them to that actual study which is the province of this society. But I think we should try to persuade our brethren to alter their conceptions of rheumatism and to remember that rheumatism is a very subtle and gradual form of disease; that all arthritis is not rheumatic—in fact, that there are many other causes of arthritis in both children and adults than rheumatism; that heart affections are peculiarly symptomless very often in origin and progress; that the treatment of them must be conducted on rational lines; and that anything in the nature of methods *ad captandum* ought not to be applied to them.

Those are the observations I had to make and I am only exceedingly sorry to have taken up so much time in developing them. I am only delighted to have done anything at all.

Clinical Remarks
ON
THE CAUSES WHICH PREVENT THE RESTORATION OF NORMAL VALVE FUNCTION IN RHEUMATIC ENDOCARDITIS.

Delivered at the Liverpool Royal Infirmary

BY RICHARD CATON, M.D. EDIN., F.R.C.P. LOND.,
HONORARY PHYSICIAN TO THE INFIRMARY.

GENTLEMEN,—You have seen many examples of acute articular rheumatism and you have observed how severe the lesion in the joints may be, how great the swelling, the pain, and the effusion; and yet in most cases, if the joint has the needful rest and protection from external chill, if a suitable diet be given and gentle cholagogues with salicylates are administered, you have observed how speedily all these grave symptoms subside; or if in any joint they linger you have witnessed their rapid subsidence on the application of one or two small blisters to the adjacent skin, the final issue in almost all cases being the restoration of every joint to the normal condition.

But why is it that when the *heart* is attacked in rheumatism a like restoration of the endocardium does not take place? Why, when a bruit at the apex has occurred during acute rheumatism, does the regurgitation it indicates with accompanying accentuation of the second pulmonary sound not also disappear when the patient rises from his bed cured of his pain and fever? Why is it that if we leave the rheumatic heart to its own course persistent bruit, hypertrophy, and dilatation—in fact, life-long heart disease with its train of attendant evils—succeed and are sure to mar or to shorten the life of the patient? Why should the course of rheumatic disease be so much more intractable in the heart than in the joints?

The reason undoubtedly is found in the fact that joints can rest; the merciful influence of pain automatically ensures repose for each affected joint. Suppose for a moment that we were to cause an acutely rheumatic knee to be flexed and extended 80 or 100 times per minute during the whole period of the attack, is there any probability that resolution would follow? Few of you, I fancy, would expect it. Rheumatic inflammation of the valve cusps usually does not cause any pain, but whether there be pain or no the toiling heart cannot abate its labours. In fact, the joint pain and the general fever augment and accelerate the ventricular effort, thus increasing the peril of the heart. Though the salicyl compounds have, as most people believe, no direct beneficial action on valvulitis I think that they have an indirect one of much importance through their power of allaying the pain and fever which in themselves excite the heart's action.

You have observed how commencing endocarditis is treated in my wards, and those of you who have been able to watch cases for a sufficiently long time have observed that the results are usually favourable. The principle we go upon is to give the heart the greatest amount of rest that is practicable. Pain and fever are subdued as rapidly as possible, absolute quiet is enjoined, the patient lies with the head low, no excitement is permitted, we make him as comfortable as we can and encourage sleep, and a light, non-stimulating diet is given. There can, I think, be little doubt that slow ventricular contraction, low vascular tension—in fact, a minimum of work—is essential if the inflamed and thickening endocardium is to be restored to its normal condition. We also, as you know, employ other measures of less importance: (1) gentle blistering of those areas of skin which have a special nerve connexion with the heart, thus imitating the effect of a blister over a rheumatic joint; and (2) the administration of moderate doses of sodium iodide. I wish to-day to show you certain cases and to tell you of others which I cannot show illustrating the subject of this lecture.

CASE 1.—A man, aged 21 years, was admitted into the hospital on April 27th, 1900, suffering from acute rheumatism and endocarditis. His temperature was 102° F., his pulse was 98, and there were a loud systolic apical bruit and accentuation of the second pulmonary sound. The rheumatism soon subsided and under appropriate treatment all signs of valvulitis also vanished in little over a month. I am sorry to say I now made a mistake. Quite in opposition to my ordinary practice and precept I allowed this man to leave his bed. Within two or three days all the signs of endocardial mischief returned; the strain to which the heart was thus exposed at too early a period of convalescence caused a recrudescence of the valvulitis. The patient had to return to bed; small blisters and iodides were again resorted to. These measures, in addition to absolute rest maintained for seven weeks, were followed by a second disappearance of all the symptoms. All hard work was interdicted for two months longer, after which he returned to the duties of his calling. He has now been hard at work for two years. He has no dyspnœa, he can climb stairs and carry heavy weights as well as any man; he will tell you that he is as strong as he ever was and if you examine his heart you will find that the dulness is only three and a half inches to the left of the middle line; the impulse is normal and so are the sounds.

CASE 2.—This man came into the hospital on Feb. 22nd with acute rheumatism, his temperature being 103° F. and his pulse 120; and within a day or two of his admission signs of endocarditis showed themselves. Absolute rest, small blisters, and iodides were prescribed. The rheumatism soon left him and within five weeks almost all signs of valvulitis had disappeared. At this point, unfortunately, I went away for a fortnight's rest. The patient felt well and he seized the opportunity of my absence to sit up in bed and to indulge in a degree of activity unsuited to his condition. On my return I found that a loud apex bruit with accentuation of the second pulmonary sound were again present. The most absolute rest was carried out for eight weeks and again the symptoms vanished, and now after some weeks' further comparative rest the man's heart appears to be perfectly sound. There are no increase of dulness and no dyspnœa on exertion—of course, I do not allow much exertion yet—no bruit, and no pulmonary accentuation; in fact, to all appearance his heart is as sound as ever it was.

CASE 3.—This woman was admitted into the hospital on Nov. 22nd, 1901, with acute rheumatism, severe double pneumonia, and right pleural effusion. She was a weak, nervous, and excitable girl. Her temperature on admission was 103·7° F., her respirations were 40, and her pulse ranged from 112 to 140 but was liable on the least excitement to rise to 160, 180, or more. Within three days of admission endocarditis became manifest. The pneumonia was severe and unusually long-continued and a lengthy period elapsed before resolution was complete. All trace of dulness did not subside until the first week of February.

Her condition was at times so alarming that it was not always possible to carry out the appropriate treatment for the valvulitis. On account of the severe cough and the dyspnœa and the persistent rapid pulse I had little hope of curing the valvulitis, and so the event proved; she recovered from the rheumatism and the pneumonia, but with a heart having five and a half inches of deep transverse dulness and loud systolic and presystolic murmurs. She died on April 13th, 1902, from heart disease and purpura. Our failure to do any good to the valvulitis was probably due to the impossibility of securing the needful degree of rest for the heart.

CASE 4.—This case is that of a private patien whom I have seen in consultation with Dr. W. Blair Be . Acute endocarditis had resulted from a severe rheumatic attack which Dr. Bell had subdued by appropriate measures before he called me in. We decided to treat the valvulitis by the method named above. The results after some weeks were highly satisfactory. Then, unhappily, came a change for the worse and the cardiac symptoms recurred. On inquiry as to the cause it was found that though the patient had adhered to the plan of treatment with strictness, circumstances had arisen causing grave anxiety and much mental perturbation, raising the pulse-rate and interfering with sleep. It appeared that only by removing the patient to fresh and quite tranquil surroundings could this difficulty be met. The change was made and it was followed by speedy amelioration. The pulse-rate fell, all signs of valvulitis are disappearing, and in all probability the patient will regain a sound heart. I recite this history because it indicates the need for mental tranquillity.

The first two of these cases illustrate in a somewhat interesting manner the evil effect of too early a return to muscular activity and higher blood-pressures during the convalescence from valvulitis; the third shows the disastrous influence of rapid heart action and dyspnœa on coincident valvulitis; the fourth exemplifies the evil result of mental agitation on a subsiding endocarditis even though absolute rest of trunk and limb be maintained; and all illustrate the several causes which, unless the physician carefully neutralise them, ordinarily prevent the recovery of the endocardium from rheumatic disease.

70 CASES OF INGUINAL HERNIA TREATED BY THE KOCHER-BASSINI METHOD;

WITH REMARKS UPON THE TECHNIQUE OF THE OPERATION.

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I DESCRIBED in the *Bristol Medico-Chirurgical Journal* for December, 1898, Kocher's method of dealing with the hernial sac in inguinal and femoral hernia. Professor Kocher's latest method had not been described in the English language at that time, and as I had had the opportunity of seeing it performed at Berne I was induced to publish a description of the method when I had only performed it a few times, chiefly on account of its simplicity, novelty, and the apparently sound principle involved in its conception. The description of Kocher's method is practically summed up in the title of the above paper, which was "The Radical Cure of Reducible Hernia by Invagination and the Lateral Displacement of the Neck of the Sac." Since that time I have performed the operation 70 times by the combined methods (1) of Kocher's treatment of the hernial sac, and (2) Bassini's method of restoring the posterior wall of the inguinal canal.

I think the combined method of Kocher and of Bassini is the best for the radical cure of hernia when it can be carried out. The two methods are founded upon an unquestionably sound basis, are easy of execution, and have withstood the test of trial. Kocher's forceps for invaginating the sac and pushing it out through the entire thickness of the abdominal wall are very slender, and in cases where the sac is not much thickened they can be protruded through the abdominal wall without the aid of a scalpel; when the sac is very large and thickened one is called upon to facilitate the egress of the invaginated sac by making a small incision upon the projecting forceps and sac. In some cases where the sac is very massive I think it is inadvisable to invaginate the sac, but that it is better to ligature it at the neck, to cut the sac off, and to pass the ligature by means of Kocher's sac forceps under the abdominal muscles for about two or three inches and to bring it out through them, hauling up the sac as far as it will go and fixing the ligature to the external oblique or to the semilunar line. In one of my 70 cases there was an interstitial hernia and in obliterating the space I placed three rows of buried sutures between Poupart's ligament and the posterior wall of the cavity.

Suture material.—I believe that non-absorbable ligature is the best material for permanency of cure, for the very safety of the patient during vomiting or coughing immediately after an operation depends upon the approximating sutures. Sutures do not cut out their way through tissues they bring together (especially fibrous structures); surely when scar tissue has formed (which, by the way, has a tendency to stretch as well as to contract) the presence of the unyielding silk fibres must be a source of additional strength against stretching to the scar fibres. I always use fine silk (No. 00) either as a continuous suture or an interrupted suture closely applied with a curved needle of small calibre and with a blunted point, similar to a rug needle or a saddler's stitching needle, according to conditions. I consider the ordinary hernia needle too coarse an instrument as it makes too big an opening in the tissue to be sutured together. The only advantage that I can see in an absorbable ligature is for cases where the surgeon is worried by suppuration.

Pyrexia in aseptic cases.—There was no drainage used except in one case where a large hydrocele was excised at the time of the radical cure. In four cases there was pyrexia to 101° F. and in one case the temperature rose to 103° after the operation, but resumed the normal about the fourth or fifth day. In most of the cases the rise of the temperature was due ether to effused blood or to hydrocele fluid bathing the field of operation, as several hydroceles coexisted with the hernia and were treated simultaneously. The temperature was a straight line in all cases except where there was an additional operation for hydrocele or where a hæmatoma formed.

Truss.—I always advise patients not to wear a truss after operation, unless in exceptional cases where the abdomen is flabby, thin, or atrophied, and in such cases a good abdominal belt suffices. I operated upon a patient under the care of my friend Dr. Arthur E. Taylor in February, 1901; a few hours after a hernia became strangulated, and in the following summer the patient played cricket vigorously throughout the season in county matches and is at present quite sound. The wearing of a truss for a number of years has sometimes an injurious effect upon the abdominal wall as well as upon the hernial sac, which becomes firmly adherent to surrounding structures and cannot be properly isolated so that a Kocher's operation may be performed upon it; in such cases I generally close the posterior wall of the inguinal canal and treat its anterior wall by Lucas Championnière's overlapping method. In congenital hernia it has been my experience that it is only occasionally that one can perform the invaginating operation.

Removal of sutures from the skin.—It is very important to know the nature of a patient's skin in order to avoid "stitch abscess," which in hernia operations with a hæmatoma following would be a source of considerable risk. Cases of failure of cure that I have seen are those that have suppurated. In tender, eczematous, or coarse skins it is advisable to take the skin sutures out at the end of 24 hours. I am inclined to think that all suppuration can be prevented by very simple means in this branch of surgery. Two of my cases suppurated, the one when I closed the skin with an absorbable ligature and in which I had hoped to dispense with the one dressing which is done when I take out the sutures. Alas, I was disappointed and the absorbable ligature caused me just enough worry to make me determine never to try it again. The other case of suppuration followed a case of operation for a strangulated hernia in which I believe I ought to have drained for a day or two instead of closing without drainage.

Dressing.—The only dressing used after operation has been six layers of gauze kept on by a wider layer of gauze fixed by collodion. I do not use bandages.

Cardiff

ON SOME CASES OF OPERATION FOR CHRONIC NON-MALIGNANT DISEASE OF THE STOMACH.

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A REVIEW of a series of more or less similar cases occurring within a given period is always interesting and profitable, and I propose to glance back at a group of non-malignant cases of chronic gastric disease treated surgically which have been under my care comparatively recently—all since this time last year. Such a retrospect enables us in the first place to contrast allied affections of the same organ in their causation, symptoms, and effects. In the next place it gives us a good opportunity of examining into the forms of treatment which have been found most effectual. The present series is a fairly complete one of its kind. It includes only those cases of non-malignant chronic inflammatory disease of the stomach and duodenum on which I have recently operated, and it includes them all; the series is consecutive. The accompanying short table gives an epitome of the group and enables us in a moment to see the class of affections we have been dealing with and the leading features of each.

Consecutive Operations for Chronic Non-Malignant Disease of the Stomach and Duodenum.

Number of case.	Sex, age, and duration of illness.	Condition before and after operation.	Result.
1	M., aged 48 years. Illness of six years' duration.	Duodenal ulcer with severe hæmorrhage from bowel. Also severe pain after food. Emaciation. Weight before operation, 8 st. 9½ lb. When last seen health was excellent. Weight 10 st.	Recovered.
2	F., aged 48 years. Ill for six years.	Gastric ulcer; "hour-glass" contraction; extreme emaciation. Weight before operation, 5 st. 10 lb. When last seen health was excellent. Weight over 9 st.	Recovered.
3	F., aged 56 years. Ill for one and a half years.	Pyloric stenosis due to ulcer. Emaciation; pain. Weight before operation, 8 st. 12 lb.; some time before was 10 st. 2 lb. When last seen health was excellent; weight had increased.	Recovered.
4	M., aged 45 years. Ill for three years.	Pyloric stenosis due to chronic ulcer. Pain, vomiting, and emaciation. Weight before operation, 9 st. 9 lb. 12 oz.; nine months later weight was 10 st. 16½ lb.	Recovered.
5	F., aged 24 years. Ill for three years.	Bleeding gastric ulcer. No stenosis of the pylorus. Repeated hæmorrhages, pain, and vomiting. Not any emaciation, but much tenderness over fundus of the stomach. Weight before operation, 8 st. 9 lb.	Recovered.
6	M., aged 33 years. Ill for four years.	Pyloric stenosis from ulcer. Pain, vomiting, tenderness, and emaciation. Weight before operation, 9 st. 2 lb.	Recovered.
7	M., aged 47 years. Ill for 15 years.	Pyloric stenosis due to gastric ulcer. Pain, vomiting, great dilatation, gastric tetany and rigors, and emaciation. Weight before operation, 7 st. 12 lb.	Recovered.
8	F. Ill for 10 years.	Pyloric stenosis from ulcer; scar hard. Moderate emaciation, pain, vomiting, bleeding by bowel, and tenderness over fundus of the stomach.	Recovered.
9	F., aged 35 years. Ill several years.	Pyloric stenosis with lump about the pylorus of doubtful nature. Extreme emaciation. Weight before operation, 4 st. 3 lb.	Recovered.
10	F., aged 52 years. Illness of 10 years' duration.	Pyloric stenosis due to small ulcer. Great exhaustion and emaciation. Great pain and daily vomiting.	Recovered.

Let us look a little more closely into these points. In the first place, all, with two exceptions, required treatment on account of obstruction to the escape of food from the stomach into the intestine. The two others claimed interference on account of chronic ulcers, in the one case of the stomach and in the other of the duodenum, which ulcers were bleeding to a disquieting and perhaps dangerous degree for long periods lasting over years in spite of good treatment. But apart from this symptom there was the danger that at any time either of the ulcers might perforate into the abdominal cavity and lead to disastrous effects.

In the cases of stenosis one showed the effects of a chronic ulcer upon the body of the stomach, contracting it into an "hour-glass" cavity which could not properly be emptied into the duodenum; the others were all instances of contraction of the pylorus itself in which either the contraction would be seen in the shape of a puckered scar through the peritoneal covering or felt by the finger pushed into its ring by invaginating the wall of the stomach (Hahn).

With the epitome before us it is hardly necessary to describe any case in detail. It will be more profitable to review the causation, symptoms, and effects practically common to all. All the cases of stenosis began with the usual symptoms of dyspepsia—i.e., discomfort or pain after food, followed sooner or later by vomiting of undigested matter and usually by more or less bleeding. Then, under restricted dieting and other more direct medical treatment remissions took place and often considerable improvement, so that but little discomfort was felt. But then, in all these cases at least, a return of the trouble occurred on resumption of the ordinary dietary. This was again met by the usual treatment of dyspepsia with the addition in the later cases of washing out of the stomach some hours after food. This last means of relieving the stomach of its residuum of fermenting food has proved a most valuable addition to the treatment of those cases in which either a chronic ulcer was present or the result of such an ulcer in the form of a contraction of a part of the stomach or pylorus. And it appears probable, from what we have seen in these and many other cases, that were washing out more frequently employed in the various forms of chronic dyspepsia as a regular treatment we should see less of the evil effects of acute and chronic gastric ulcer. But in the later stages of gastric disease where an ulcer is becoming chronic and is producing stenosis it can only, of course, be regarded as a valuable palliative and again as a useful preparation for operative treatment. The cases in this list, although several of them were thus treated by lavage for long periods, were so chronic that a permanent cure was not effected in any.

Another symptom was present in most of the cases—namely, dilatation, more marked, of course, in those who came to us after little or no preliminary treatment than in those who had been kept on restricted and suitable diet. It is quite plain that dilatation of the stomach can be more or less prevented by careful diet, so long as there is even a small outlet for the food from the stomach. It is only where the latter is almost absent that the dilatation is extreme. But it must not be forgotten that besides actual organic contraction of the stomach or pylorus the outlet may be contracted by the sphincter action of the pylorus induced by irritation of improper or fermented food with or without an excoriation or ulcer of the ring. In these cases the regular removal of an undigested residuum from the stomach some hours after meals eliminates the source of irritation and gives the pylorus rest. This is productive of the most marked immediate benefit and may even, if regularly carried out, result in a return to nearly normal conditions in the pylorus by removing the irritant regularly and giving the ulcer or abrasion complete rest for hours at a time, during which the sphincter is relaxed, for it must never be forgotten that one of the functions of the pylorus is to prevent improper food or ill-digested material from gaining its way into the small intestine. For this reason all semi-putrid material in a dilated stomach is prevented by spasm of the sphincter pylori from entering the duodenum.

The dilatation of the stomach in these cases has been estimated in the first place by percussion. This, however, is clearly an unsatisfactory method of testing the size of the organ if taken alone. If the stomach contains much gas its size is easily demonstrated by percussion. But in many of these cases there was but little gas to a large quantity of fluid and undigested food. I therefore make it a rule in all these cases to test the point of dilatation first by percussion, then

by observing how much is drawn off from the organ by syphon, next by filling the stomach again with water until discomfort is produced and measuring the quantity which can now be withdrawn, and finally by inflating the now empty organ with a Higginson's syringe and percussing it out again. This can all be done quickly and without much distress while at the same time the washing out is beneficial. In the penultimate case operated on the dilatation when gentle injection of air was used was seen to be extreme and the border of the organ could be distinctly made out through the very thin abdominal walls as a ridge sweeping in a long curve some inches below the umbilicus. This method of injection of fluid or air has a further aim. It enables us mainly to estimate the muscular power of the stomach—in other words, whether there is hypertrophy of its muscular walls or an atonic condition combined with dilatation. This point is of importance. If the fluid is returned with force it indicates, in the first place, that obstruction is probably marked, but that after a gastro-enterostomy a rapid return to the normal may be expected. But if the fluid in a largely dilated stomach is returned with very little force or has to be syphoned off there may be stagnation in the organ from atony even after such an operation, and it may be better to postpone the latter until, by a course of washings and tonics, the organ is more or less restored to its normal contractility. For nothing can be worse for the chances of good union between the stomach and intestine than the stagnation of blood, mucus, bile, and swallowed food around the new opening.

In the two cases in which gastro-enterostomy was done on account of hæmorrhage there was no dilatation when seen by us. The patients had been suffering from vomiting of blood on and off with pain in the one case for three years and in the other for six years, with passage of large quantities of blood by the bowel. Both had pain after food. These symptoms were only partly relieved by treatment in this hospital and elsewhere and always recurred on remission of medical treatment and return to anything like normal diet. The fear in these cases was either that the bleeding would prove fatal or that perforation would sooner or later take place unless the stomach was regularly relieved (one was an ulcer in the duodenum). Almost all these cases then had had careful medical treatment before the question of surgical interference was entertained.

The preparation for the latter was the routine one with me. It consisted in the cleansing of the stomach for several days by washing and the administration of only small quantities of sterile fluid food. The mouth was at the same time cleansed and carious teeth were extracted. This I hold to be of the utmost importance. Concurrently the patients were given 10 grains of carbonate of bismuth three times daily as an intestinal antiseptic and the lower bowels were washed out with enemata. Where great emaciation was present the normal amount of water was given to the tissues by hypodermic instillation of normal saline solution, a pint morning and evening, and to this I have added 5 per cent. of glucose with much benefit. Nutrient enemata were also the rule for days before. When by these means the stomach had been cleansed and the forces of the patient recuperated, after thorough antiseptic cleansing of the skin the operation was carried out as rapidly as possible with the exclusion of strong germicide from all contact with the abdominal contents. The operation in all these cases was done without Murphy's button or any appliance of the kind. In every case it was the retro-colic variety (v. Hacker). The suturing was done in the same way as in my first case 15 years ago—namely, by uniting the serous and muscular coats behind the proposed opening, before the latter was made, and then by opening the gut and stomach and uniting the resulting edges and finishing the continuous suture over the front which had been begun before the viscera had been opened. When I published this method 15 years ago I did not know that it would become the classical one, as has been the case. The abdominal wound was closed in every case except one by sutures, including all the layers with the skin. Oddly enough, in the exception in which buried sutures were used in addition to skin stitches the whole wound yielded on the tenth day after the latter had been removed from a flawless primary intention wound. The same evening the wound quietly gaped during a trifling movement of the patient in bed. Four days later I found the wound widely open on removing the dressings and the omentum and small intestines exposed. The patient, however, was in excellent condition and with a normal temperature. The edges of the wound were covered with lymph and a little fresh blood-clot; there was no trace of pus. I simply scraped off the lymph, wiped the edges dry, and sutured through the whole thickness of the abdominal wall, removing the old buried sutures at the same time. The wound healed as thoroughly as if by first intention and the scar was quite sound when the patient left the hospital.

In the course of operations such as those applied to these cases there are countless small details upon which their success greatly depends but which I should find it very difficult to describe adequately and at the same time briefly. They can only be learned by close attention to every step of the procedure. Fortunately, these cases have followed each other so steadily and closely that those who attend our hospital have had every opportunity of becoming familiar with them and I need attempt no detailed description of them.

There remain, then, to be considered only some points in regard to the after-treatment of these cases of non-malignant pyloric stenosis in which posterior gastric enterostomy has been done. In the first place, while on the operating table if there were any signs of shock the patient received in the areolar tissue of the arm near the axilla a pint of the saccharo-saline solution. This and the maintenance of the body heat by hot-water bags and wrapping in cotton-wool was found quite adequate in all to prevent the evil effects of shock which was hardly seen in any, even the most asthenic. On being removed to bed the patients were placed on their backs, at first a little inclined to the right. As soon as they wished (generally the second day) they were kept in the semi-recumbent position while awake and were laid on their right side for sleep or change of position. All this seems to have several advantages. In the first place, whatever fluid is in the stomach, be it bile, blood, or food, and mucus, appears more readily to find its way into the new outlet of the stomach than when the position is directly flat on the back. Then there is less chance of œdema of the lungs when the thorax is semi-erect. Again, the occasional change of position with these patients suffering in most cases from the most extreme emaciation, is the surest way of warding off bedsores and securing comfortable sleep. But doubtless the most important factor of all is the increase in the capacity of the chest as the abdominal viscera sink downwards in the almost vertical position of the trunk. Lung troubles are, as we know, the bane of abdominal operations and without going into all the theories as to their causation it must be admitted that restriction of the free movements of the thorax contributes at all events to their danger.

The next point worth noting is that all these patients have been fed from the first by the mouth as well as by the rectum. As soon as it has been clear that chloroform nausea was not present or passing off they have had albumin water with a drachm of brandy at first half an ounce every two hours, then every hour, and then double the amount until about the fifth day they were ready for Benger's food, pounded fish, or chicken.

A further matter attended to has been the tendency in many cases to regurgitation of bile into the stomach during the first few days when it may produce a sense of weight and discomfort or induce vomiting. This was shown by Carle and Fantino to be almost the rule in such cases, even when patients were almost unconscious of it. In almost every one of these cases, then, I have introduced a rubber tube into the stomach during the first 24 hours with a view to relieving the organ of bile with blood and mucus, which is usually there and may be decomposed if left there. And I have been astonished in several cases at the amount of fluid lying stagnant in the organ after operation and also at the amount of relief given. So great is the latter that patients who have once had the tube will assent to it again if they do not actually suggest it. There has been very little need in these cases, as a rule, of washing out the stomach at the same time that the fluids have been syphoned off. But in some cases, especially where there was oozing of blood from the stomach and intestinal wounds, washing out with boric solution or mere normal saline solution has appeared to be beneficial. All the wounds have healed blamelessly. But in one, as already mentioned, in a man suffering from the most extreme emaciation, the scar opened on the tenth day and had to be re-sutured. Not the slightest ill result followed.

As to the results, all have recovered and the change in health in those who have had time to show it has been most remarkable. The patients have all increased in weight and lost all their other symptoms. It is quite clear to me now that in such cases of non-malignant stomach disease lasting for years in spite of skilled medical treatment the formation of a short cut between the fundus of the stomach and the upper part of the jejunum offers a very good prospect of complete relief and with a very moderate risk. And as the principles underlying these operations are better understood and our technique improves in detail these risks cannot but become less and less to judge by the history of other operations.

30 CASES OF GASTRO-ENTEROSTOMY FOR NON-MALIGNANT AFFECTIONS OF THE STOMACH.[1]

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THE operation of gastro-enterostomy has so long since passed the region of experiment that at this date it is hardly necessary to enter into the question of its propriety in suitable cases. Of course, the object of the operation is to enable the stomach to empty its contents into the intestine in cases where, from organic or functional causes, that does not occur with sufficient readiness to prevent fermentation, in consequence of which a state of irritation is induced in the mucous membrane of the stomach as well as a general deterioration of health from starvation and the absorption of toxins. Of the utility of the operation in pyloric obstruction, simple or malignant, there can, of course, be no doubt whatever, and it seems to me that much benefit may be obtained in cases where the normal action of the stomach is prevented, or at least materially retarded, by adhesions, either in the region of the pylorus or over the general surface of the organ, due in many cases to plastic peritonitis from a perforating gastric ulcer or to pathological changes in the neighbouring viscera. It is probable that in another group of cases due merely to functional disorder, where we have dilatation of the organ without obstruction at its outlet, but accompanied by the usual fermentative changes, we have in gastro-enterostomy a means of draining the organ and thereby of alleviating the misery which has been found by the physician to be unrelieved by any ordinary method of treatment. No doubt the operation would be most useful and most frequently practised in those cases where there are marked organic causes leading to dilatation. The establishment of the operation as a useful and trustworthy means of treatment will necessarily depend upon the mortality which accompanies it.

I beg leave to bring before this section a group of 30 operations undertaken for the cure of apparently incurable dyspepsia, many of them with evidence of marked pyloric obstruction. The patients had been under treatment prior to operation for periods varying from two to 17 years, 16 of them with definite history of ulceration. At the operation it was found that 18 of these cases presented well-marked contraction of the pyloric orifice, and in two cases this was so extreme as practically to amount to occlusion, so that it had been found necessary to wash out the stomach two, and occasionally three, times a day to render life tolerable, and from the history it was evident that little or no material entered the intestinal canal. The degree of contraction was estimated by examination from within the stomach. In eight cases the obstruction was due to adhesions the result of peritonitis originating from old tuberculous glands behind the pylorus, these adhesions so compressing and kinking it as to interfere with the emptying of the stomach. In three cases the posterior wall of the stomach was found adherent to such an extent as to interfere with its muscular action and in one of these the adhesions were so extensive and their contraction was so considerable that the pylorus was pulled backwards and to the left side so that it simulated a tumour of the splenic flexure of the colon, for which, indeed, it was mistaken prior to operation. In one case there was marked dilatation of the stomach without any apparent physical cause. Many of these patients were in a state of great emaciation from prolonged malnutrition. In three of the cases of external adhesions I had previously operated with only temporary relief after their separation—an experience which seems to be not unusual; indeed, I find that of seven cases in which I have divided adhesions only one remains permanently benefited, so that I am inclined to think that in such cases it is better to put the stomach at rest by the performance of a gastro-enterostomy.

The symptoms presented by the individual cases were, as usual, varied and variable, as was also the amount of dilatation. In all, the misery and suffering were sufficiently great to render the patients very willing to run the risk of the operation with prospects of relief. In those cases where the trouble was located not in the pylorus itself, the dilatation was naturally least, and in four of these cases did not indeed exist to any extent, although all the symptoms of an obstructive dyspepsia were present. No doubt the amount of dilatation in many of these cases had been kept in check by regular lavage of the stomach practised in periods varying from two months to three years. In almost all the cases, pain was a prominent symptom; and, indeed, in four cases, while there had been no vomiting except on very infrequent occasions, the pain was so persistent and intense, and so utterly unrelieved by medicinal treatment, that an exploratory incision was advised and a physical condition was found which warranted the gastro-enterostomy being performed.

As a preliminary to operation careful lavage of the stomach was carried out in all cases for two days before the operation, plain water being used and great care being taken thoroughly to empty the stomach immediately before operation. With all the ordinary antiseptic precautions an incision was made above the umbilicus, in the earlier cases through the middle line but later through the middle of the left rectus muscle. With the exception of four cases all the operations have been that of posterior gastro-enterostomy, the anterior being performed in one case by selection and in the others being rendered necessary by the presence of extensive posterior adhesions which rendered it impossible to gain access to that surface of the stomach.

The usual method of operation has been to withdraw and turn up the omentum and colon, guarding these with large, flat, natural sponges wrung out of sterilised saline solution. The posterior wall of the lesser peritoneal bag is opened with a cut from the scissors and this wound is stretched sufficiently to allow a portion of the stomach, preferably near the junction of the pyloric with the middle third, to be drawn through, so that the opening may be situated high up—that is, towards the lesser curvature. A loop of the jejunum, readily found by looking for the termination of the duodenum, is then withdrawn and approximated to the selected portion of the stomach and fixed to it by means of hook forceps about two and a half inches apart, so that ample room may be left for the stitching. In all cases three rows of continuous sutures were inserted: the first, that to be furthest from the opening, being of silk; the second, of catgut which may absorb in from four to six days; and the third, next to the lumen of the canal, of fine intestinal silk—the idea of the intervening catgut being to secure a zone of adhesions without the prolonged presence of a foreign body, so that the outer retaining suture may be less easily contaminated by sepsis from the necessarily exposed wound of the mucous membrane. After the first two rows of sutures have been inserted half-way round that point where the opening is to be made, they are carefully guarded with sterilised gauze and the jejunum is opened in its long axis, opposite to the attachment of the mesentery, and a corresponding opening is made in the long axis of the stomach. These openings have generally been about two inches in length. All bleeding points are carefully ligatured, and while this is being done plugs of gauze are inserted into both openings to prevent escape of contents, which for the most part consist of mucus and bile. But rarely has this given rise to any trouble, since the parts can be held up sufficiently to prevent overflow. Finally, the third row of sutures, including all the coats, is inserted quite close to the gut wound, and thereafter the second and first rows are carried round to where they started. The opening

[1] A paper read before the Surgery Section of the British Medical Association at Manchester on August 1st, 1902.

in the omentum is then carefully adjusted round the anastomosis and the parts are returned to the abdomen, the abdominal wound being closed in the usual way, preferably by suturing in layers, and in addition by a number of sutures transfixing the entire thickness of the abdominal wall.

As to the immediate after-effects of the operation, in no case has there been shock of any consequence, and but rarely has the temperature risen to 100° F., and that only during the first 24 hours. Sickness, persisting for some days after the operation, has been noted as occurring most frequently in women, and in only two cases has the bilious vomiting persisted beyond the third day, and in the last 12 cases, with one exception, there has been no bilious vomiting whatever—a happy result which I am inclined to credit to leaving the jejunum slack by forming the attachment lower down than formerly and probably by placing the opening higher up in the stomach. In one case I performed a double anastomosis, as practised by Mikulicz, but the result was not encouraging. As soon as the sickness of anæsthesia passes off the patient is allowed water and barley-water freely and as soon as inclined a copious supply of chicken-tea and diluted peptonised milk, so that by the fourth day from three to four pints of liquid nourishment are being taken and at the end of eight or 10 days light puddings and pounded meat. In one case there was a threatening of enteritis. The patient had been confined to her bed for the greater part of two years and the pylorus was found to be practically occluded, so that little or no nourishment passed from the stomach into the intestine, which was found to be so thin as to render its suture to the enormously hypertrophied stomach wall a matter of great difficulty. Within a fortnight, however, by very gradual and careful gradation of feeding, this patient overcame the tendency and is now a vigorous, robust woman. Two cases occasionally had bilious vomiting, one after the lapse of three months, the other after one and a half years, but this happened so seldom and gave rise to so little trouble, only occurring in the morning before food had been taken, that the patients practically ignored it.

In regard to the ultimate results of the operation, of these 30 cases of gastro-enterostomy for non-malignant disease of the stomach I lost one, and that is naturally the most important case of all for our consideration. The post-mortem examination showed a condition of things rendering the fatal issue a not improbable one. The patient, a man, aged 54 years, had suffered from his stomach for seven years and for the previous eight months he had used a stomach-tube each day to relieve the oppression and flatulent distension. His story was that from four to five hours after a meal he had great pain near the pit of the stomach which was relieved often by lying down and by taking more food. He rarely vomited and only once was there any trace of blood in the vomited material. Examination showed that the stomach was markedly dilated, passing below the umbilicus. No definite tender spots could be felt and there was no tumour or pyloric thickening. Hippocratic succussion was manifest but there was no peristaltic wave. A test-meal of one pint of milk, half a pound of boiled fish, and a slice of toast was given, and three and a half hours afterwards it was found that the stomach contained seven and a half ounces of fluid with an intensely sour smell, due to the presence of organic acids, there being an almost complete absence of hydrochloric acid. These observations were made by Dr. John S. McKendrick, who diagnosed the case as one of gastric catarrh, with distinct dilatation, probably atonic in character. The patient was put on a special diet, with a tonic containing dilute nitric acid, nux vomica, and pepsin, with, in addition, hyposulphate of soda between meals. For a time he improved and gained in weight but the pain returned. When I saw him with Dr. McGregor Robertson and Dr. McKendrick on Sept. 11th, 1901, nothing was found on examination under chloroform suggesting a tumour or pyloric thickening. It was determined that laparotomy should be performed and on Sept. 27th operation revealed three adhesion bands passing from the under surface of the liver to the duodenum, tucking it up so as practically to kink the pylorus. He obtained great relief from this operation and continued well for some time, being able to eat heartily, so much so that his wife stated that he ate occasionally a whole rabbit for his lunch. At the end of the year, however, the pain returned and with it a very great amount of abdominal distension. This pain differed from anything he had had previously; it seemed to be located in the neighbourhood of the left kidney and extended into the iliac fossa. At the urgent request of the patient it was agreed to reopen the abdomen, which was done on Dec. 19th, when it was found that the old adhesions had re-united, and in addition a mass was found in the posterior wall of the stomach, fixing it posteriorly. When the stomach was opened it was found that there was in this mass a circular opening with firm thickened edges and with a deep, crater-like ulcer in the centre of a large mass of tissue. An anterior gastro-enterostomy was performed, although with considerable difficulty on account of the extreme flatulent distension of the intestine. After the operation everything went well. Although the distension persisted it did not increase, nor did the pulse increase in frequency, remaining as it was prior to operation, between 80 and 90, so that on the third day he expressed himself as remarkably comfortable, and when last seen by me he was reading the morning paper. The following day, however, the patient complained of sudden acute pain in the wound, and on my assistant removing the dressings a small protrusion of intestine was found between two stitches about three-quarters of an inch apart. One of these was immediately removed and the intestine was replaced, but the patient died from shock within two hours. Post mortem there was found no evidence of peritonitis. The suturing had remained firm and was quite satisfactory, but that which we had supposed at the time of operation to be a large malignant growth extending and breaking down proved to be an unusually large simple ulcer, the whole of the stomach walls being destroyed for a circular area about two inches in diameter, exposing thereby the inflamed and thickened pancreas, the fibrous tissue of which was evidently being digested, so that only the secreting structures remained. This, then, is the only death out of 30 cases, and I feel that while the operation led to the fatal result that result is to be ascribed to the complication which existed and which would have had the same ending had laparotomy been done for any other disease. The sutures between which the protrusion took place were not more than three-quarters of an inch apart and transfixed the whole of the abdominal wall. The case is otherwise an extremely interesting one in view of the involvement of the sympathetic plexuses with the consequent peculiar distribution of pain and intestinal paresis.

In regard to the ultimate result of the cases it is as yet too early to speak in the more recent ones, though, with the exception of two cases operated upon for very widely diffused adhesions round the stomach, and one case where no organic cause was found for the intense gastric trouble, all the others have proved, on the whole, extremely satisfactory, particularly so in those cases where the patients had previously suffered from marked obstruction in the pylorus itself. In 18 of these cases the patients state that they are as well as ever they were in their lives. Although there may be a natural tendency to exaggerate on their part, there is no doubt that they have been relieved from their distressing symptoms and have materially gained in weight—in one case from five stones 11 pounds to 11 stones within a year after operation. Three of the patients state that while there has been improvement they still suffer from pain, though life is now tolerable. The remaining nine express themselves as very well indeed, although they have to be careful in their dietary and occasionally suffer from attacks of flatulence.

It is not within the scope of the present contribution to compare this operation of gastro-enterostomy with other operations for the relief of dilatation, but I believe that in this operation we have a means of relieving a vast amount of suffering, and, what is of equal importance, of returning to the body politic many useful and valuable lives otherwise doomed to suffering and misery, and this with an amount of risk to life much less than is daily undertaken for less serious ailments. I therefore beg to add my experience to the brilliant results already published by Mikulicz, Kocher, Robson, Barker, Moynihan, and many surgeons in this and other countries, whose results prove equally the safety, necessity, and efficiency of the operation.

In comparison with operation for malignant disease of the pylorus it has been my experience that the operation, if done early, is not attended by much more risk than when done in simple cases. I have operated in very advanced cancer in four cases with the hope of alleviating the final sufferings, but the result has not been encouraging.

Glasgow.

A CASE OF POST-OPERATIVE HÆMATEMESIS.

BY ARTHUR H. BUCK, F.R.C.S. EDIN.,
ASSISTANT SURGEON, SUSSEX COUNTY HOSPITAL; SURGEON, BRIGHTON AND HOVE THROAT AND EAR HOSPITAL.

THE following case, which I saw with Mr. E. H. Sweet of Uckfield in April of this year and afterwards operated on, is, I think, of interest, as the records of similar cases are not numerous.

A spinster, aged 53 years, had suffered from pelvic pain, menorrhagia, and metrorrhagia for 23 years. On May 6th, ether having been administered by Mr. Morris Rigby, the abdomen was opened and the patient was placed in Trendelenberg's position. The pelvis was found to be occupied by an adherent mass consisting of (1) the Fallopian tubes dilated to the size of small intestines and coiled over and amongst the other structures; (2) a left ovarian cyst of the size of an orange and adherent to the anterior surface of the uterus; (3) the right ovary, small and atrophied; and (4) the uterus, which was completely retroflexed and presented in its posterior wall a fibroid as large as a cricket ball. These structures were firmly adherent to one another, to the bladder in front, and to the rectum behind. The broad ligaments were indistinguishable and on removing the left tube the ureter on that side was exposed for four inches. After considerable difficulty the pelvis was cleared and flaps of peritoneum were sutured so as to leave a smooth-walled cavity. The operation was necessarily a severe one and lasted for two hours. Mr. Sweet kindly and most ably assisted me.

During the first 36 hours after the operation there was considerable abdominal pain and sickness occurred several times. Morphia, to which the patient was accustomed, was administered hypodermically three times in quarter-grain doses. Flatus was freely passed and the abdomen was never distended, nor were the abdominal walls fixed. The pulse-rate did not exceed 88 and the highest temperature was 100° F. 36 hours after the operation the patient vomited a large quantity of altered blood (coffee-coloured) and a second similar quantity four hours later; the temperature fell to subnormal but the pulse was not affected. Mr. Sweet prescribed a lead and opium pill, and the following day, as the vomiting of blood, attended by very severe retching, continued, four doses of liquor chloride of adrenalin were administered hourly, the first two doses consisting of 30 minims each and the last two of 10 minims. Mr. Sweet also gave four grains of calomel, followed by two grains of calomel twice at intervals of two hours, producing a good action of the bowels. After this there was no further vomiting of blood, although extremely violent retching persisted, with the result that the fine silk used for suturing the sheath of the rectus gave way at the upper part of the wound and intestine protruded on the fourth day. Under chloroform the wound was re-closed with silkworm-gut sutures. During these four days nutrients were retained, flatus was passed, the bowels acted on the second day after turpentine enema, and on the third after calomel. The pulse-rate did not exceed 100, neither did the temperature rise above 100°. The patient then very rapidly picked up and made an excellent recovery, thanks to her nurses and medical attendant, and is now perfectly well.

Mr. A. W. Mayo Robson and Mr. B. G. A. Moynihan, in their recent work "Diseases of the Stomach and their Surgical Treatment," refer to several cases of post-operative hæmatemesis of which four were fatal. In THE LANCET of Oct. 20th, 1900, p. 1125, three cases were reported and a fair number of others have been published. The operations after which the complication has been noticed have been various, as have been the causes to which the hæmorrhage has been attributed. The view that Mr. Mayo Robson and Mr. Moynihan take, that it is due to a reflex nervous action, would fit in well with the above case, as the severity of the operation and the removal of both ovaries and uterus would no doubt upset, if any operation will, the equilibrium of the sympathetic nervous system.

I would add that this complication is evidently more likely to occur in those whose blood coagulability is below par and it is interesting to note in connexion with Professor Wright's statements with regard to urticaria and weakened power of blood coagulability that this patient has suffered from urticaria off and on since she can remember and that this has greatly improved under treatment by calcium chloride.

Brighton.

METHODS OF UNITING DIVIDED INTESTINE.

WITH SPECIAL REFERENCE TO A NEW BONE BOBBIN FOR THAT PURPOSE.[1]

BY E. STANMORE BISHOP, F.R.C.S. ENG.,
HONORARY SURGEON TO THE ANCOATS HOSPITAL, MANCHESTER.

METHODS of union are divisible into four main classes: (1) simple suture; (2) suture on moveable forceps; (3) suture on absorbable material, usually decalcified bone; and (4) metallic couplers.

In simple suturing probably Lembert's suture holds the first place, although the principle upon which it is based, the advisability of non-perforation of the mucous membrane, is not now so firmly held as it was at the time I first advocated a suture which penetrated the entire wall. A similar method has lately been widely adopted in America. In all cases, even in some of those treated by the fourth method, suturing of some kind is necessary.

Suturing on moveable forceps, as those of Laplace and O'Hara, is easy and rapid, but they have the defect that no protection from the entrance of fæcal matters between the lines of union is afforded by them during the dangerous period immediately after operation. I am not sure that the crushing of the ends produced by their use is directly harmful, since it should be an advantage if these ends, which form an internal flange, afterwards could be removed by necrosis, provided always that such necrosis went no further. Judging by analogy, however, from the recorded results of pressure necrosis produced by Murphy's button, this is not always to be implicitly relied upon.

Metallic couplers, of which Murphy's is the type, have the great advantage of rapidity in application, an advantage which, I believe, must always render it unlikely that they can be entirely set aside, but so many cases are now to be found in the literature of the subject in which unpleasant later results have occurred that I conceive that they should never be chosen unless the element of time is of the first importance. Progressive necrosis of the gut starting from the line of union and spreading towards some unprotected point, absolute later obstruction, retrograde movements, as backwards into the stomach in gastro-enterostomy, and other incidents of a like kind increase unnecessarily the anxiety of the operator and endanger the final successful result.

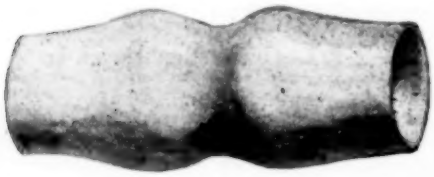
There remains the method of suture over some absorbable material. This has great possibilities. Its advantages are that (1) complete and satisfactory suturing is more easily and thoroughly carried out over its resistent surface; (2) it protects the line of union from infective material until such union is complete; (3) it maintains patency and decreases the possibility of post-operative stricture; and (4) when the period of its usefulness is over it disappears. But in order to obtain the best results from it it should possess the following qualities: first, it should be easy of introduction; secondly, it should be perfectly simple and require no elaborate technique; thirdly, it should be resistant and absorbable; fourthly, it should be so made that the purse string sutures which encircle the ends of the gut should, as they are tightened, approximate these ends by the mere act of tightening; fifthly, when in position it should present the folds of intestine which have to be united by a second line of suture in such a way as to facilitate that suturing; and sixthly, it should be of such a size and shape as to protect the line of suture during the period of plastic union.

Examination of the bone bobbins available at the present time shows that whilst all possess one or other of these characters not one combines them all. The bobbins in use at present are known by the names of the operators who have devised them. They are Jessett's, Allingham's, and Robson's. Jessett's possesses the first, third, fifth, and sixth. It is wanting in the second and fourth. Allingham's

[1] Abstract of a paper communicated to the British Medical Association meeting at Manchester, July, 1902.

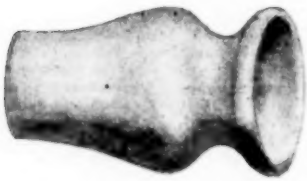
possesses the second, third, fourth, and sixth. It is without the first and fifth. Robson's possesses the first, second, third, and sixth. It makes no attempt to supply the fourth and fifth. The bobbins which I bring before your notice attempt to supply them all. It is for others to say as to how far they succeed. As will be seen, they present the bevelled conical end which makes Jessett's pattern so easy to introduce, but they are in one piece and do not require the method of

FIG. 1.



Enterectomy.

FIG. 2.



Gastro-enterostomy, ileo-colostomy.

FIG. 3.

Pylorectomy.

fixation to each end of the bowel which he describes.[2] In the centre there is the essential portion of Allingham's bobbin, the double inclined plane, tightening over which approximates the bowel ends, whilst the combination of these two produces a short fold in the intestine on either side which is easy to unite by Lembert's or a continuous suture, thus burying the two tied down extremities.

But no one form is the best for all the various operations which are now practised upon the alimentary tract, though all forms should be only modifications of the central idea. I present three, one for ordinary enterorrhaphy, end to end; one for ileo-colostomy or gastro-enterostomy, which, as you will notice, is simply the first tube with the end which projects into the colon truncated and its opening widely flared. But the protecting ridge and the inclined plane behind this are still retained. The last form is one for use in pylorectomy. In this one end is still more widely spread out, so as still more to protect the part which experience has shown is the most likely to leak—viz., that at the junction of the vertical with the circular line of suture in the stomach. The method of use is obvious. These bobbins have been very well made and decalcified for me by Messrs. Allen and Hanbury of Wigmore-street, London.

Manchester.

[2] Surgical Diseases of the Stomach and Intestines, p. 266.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

REFLEX MOVEMENT OF THE AURICLE OF THE EAR.

BY E. DONALDSON, L.R.C.P., L.R.C.S. IREL.,
SURGEON TO LONDONDERRY EYE, EAR, AND THROAT HOSPITAL.

A NUMBER of skin reflexes have been described, but I am not aware that amongst them a reflex movement of the auricle has been included. My attention was drawn to this subject by the case of a man, aged 54 years, who came under observation on May 14th, 1902, on account of suppuration in the right middle-ear with polypus. The discharge commenced in the ear from some unknown cause when he was eight years of age and lasted until he was 25. He had no trouble from this time till the beginning of April, 1902, when the discharge again appeared and a good deal of pain followed. The polypus was removed by means of a snare. He was very deaf in this ear, not being able to hear either a loud voice close to the ear or a watch on contact. As part of the treatment I insufflated into the meatus some powdered boric acid through an ear speculum without holding the auricle. At each puff the auricle was observed to move distinctly forwards to the extent of about one-eighth of an inch; afterwards at different sittings I had a good number of opportunities of observing this reaction, and I found that I could produce it by blowing air from a small indiarubber bag into the auricle in the neighbourhood of the external meatus. Usually the first puff gave the best result. The movement of the auricle would sometimes not occur after three or four puffs rapidly following one another. At no sitting did I fail to get the reaction. In making the observations I was careful to exclude voluntary movement, and movement that was only a part of a more general scalp movement. The patient was requested to prevent the reflex from taking place but he could not do so, and he was unable to produce the movement voluntarily. He was quite conscious of the auricle moving to the air stimulus and said that he felt it "jumping." The left ear was normal and its auricle when blown into moved very slightly in a backward direction. Since I first noticed this reaction I have tried on several patients what movement of the auricle could be produced by blowing air from a small indiarubber bag into the auricle. In many cases no movement was observed. I have found, however, that a slight upward, backward, or forward movement is not at all uncommon.

It is remarkable that a puff of air is the stimulus capable of producing this reflex. It is well known that reflexes of different parts require their own peculiar stimuli—e.g., contraction of the iris is brought about by the stimulus of light, the plantar reflex by tickling, &c. The appropriate stimulus in the reflex now under consideration is found to consist of puffs of air. Is it possible to give any reason for this? Air rushing into the auricle and external meatus makes a noise and interferes with the hearing of other sounds and possibly may bring in with it foreign bodies. Birds have no auricles and are not incommoded by the rushing of air into their external ears during their flight. It is said that in long-eared bats the auricle "is so constructed as to prevent air from rushing in while flying."[1] These considerations appear to me to go some way towards explaining why the auricle is more sensitive to puffs of air than to other stimuli.

Londonderry.

[1] Quoted by Burnett in his Treatise on the Ear, p. 29.

A CASE OF COMPOUND DISLOCATION OF THE HEAD OF THE HUMERUS INTO THE AXILLA.

BY WALTER H. BROWN, F.R.C.S. IREL., M.R.C.S. ENG.

THE patient, a boy, 16 years of age, was admitted into Leeds General Infirmary with the head of his left humerus

forced from its position and driven through the skin of the axilla so that it was fully exposed externally. The accident was caused by his sleeve being caught in revolving machinery (a turning lathe). There was no fracture of the shaft of the humerus, but the great tuberosity had been torn off and so had all the muscular attachments together with the capsular ligament. Ether having been administered, the wound was enlarged and the dislocation was reduced, gauze drainage being used. The radial pulse could not be felt at first but returned in 48 hours. Sensation was not interfered with. Some slight suppuration of the edges of the wound followed, owing to skin infection. The limb was kept at rest by a cradle of Gooch splint and passive movements were commenced as soon as the wound healed. I have never met with a case like this before, nor can I find any recorded in the English surgical treatises at my disposal, but the condition is mentioned in a German work on fractures and dislocations, and the treatment there indicated is the same that I adopted. There is a good prospect of the patient recovering a useful limb. From the rarity of the accident it deserves, I think, to be recorded.

The notes of the case were taken by the house surgeon, Mr. R. N. Butterworth.

Leeds.

AN UNUSUAL FRACTURE OF THE SUPERIOR MAXILLA.

BY FRANKLIN COX, L.R.C.P. LOND., M.R.C.S. ENG.

THE following case is of sufficient rarity to be interesting. On July 16th, 1902, a man, aged 38 years, was watching a game of quoits. Unfortunately for him, he crossed the green between the two quoit beds just as a player was delivering his quoit weighing 9 lb. and it struck him in the face, knocking him down. On examination the left superior maxilla was found to be fractured—the line of cleavage running along the roof of the mouth in the line of the intermaxillary suture, the two middle incisor teeth being almost out and the mucous membrane torn for one and a quarter inches in the line of fracture. Upwards it ran obliquely to a point about a quarter of an inch above and external to the left ala of the nose and then descended in a downward and outward direction to a point between the second upper bicuspid and the left first upper molar. This could be made out by grasping the alveolar margin of the left superior maxilla with the forefinger and thumb when the V-shaped piece of bone could be distinctly felt to move and when pulled gently forwards the broken margins could be distinctly felt. The skin over the fracture was not lacerated so much as one would have thought probable, but there was a deep wound laying the bone bare and extending from the middle line of the upper lip about a quarter of an inch below the nose upwards and outwards to the left for about one and a half inches. This wound has healed and the patient is doing well. There was never any concussion of the brain.

Radstock, Somersetshire.

VACCINATION RETURNS.—At the meeting of the Exeter board of guardians held on August 12th it was reported that 431 births were registered during the last six months of 1901 and that of these children 304 had been successfully vaccinated, 11 were provided with exemption certificates, 48 died unvaccinated, 34 were provided with medical certificates of postponement, 17 had been removed from the district, and 17 were unaccounted for.—At the meeting of the Stonehouse (Devon) board of guardians held on August 14th it was reported that 238 births were registered during the year ended Dec. 31st, 1901, and that of these children 200 were successfully vaccinated, 18 died unvaccinated, five were provided with medical certificates of postponement, two were provided with exemption certificates, 10 had been removed from the district, and three remained unvaccinated.—At the meeting of the Thornbury (Gloucestershire) district council held on August 1st it was reported that 299 births were registered during the six months ended Dec. 31st last, and that of these children 171 were successfully vaccinated and 15 were provided with exemption certificates.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

BRISTOL ROYAL INFIRMARY.

A CASE OF PYLORECTOMY.

(Under the care of Mr. ARTHUR W. PRICHARD.)

PYLORECTOMY is an operation of somewhat limited applicability, for, as it is chiefly performed for malignant disease of the pylorus, it is only suitable for those cases in which the disease is not extensive. The mortality from the operation has much lessened of recent years. In Professor Mayo Robson's tables,[1] containing all the recorded cases (572 in number) to that date, the mortality was 30 per cent., but statistics limited to more recent cases give a much more favourable result. Kocher in 57 cases had only five deaths—i.e., less than 9 per cent.

A domestic servant, aged 27 years, was admitted into a medical ward at the Bristol Royal Infirmary on March 21st last complaining of indigestion. She had had symptoms for nine years of pain in the stomach after eating, and for the last three years there had been occasional vomiting with pain chiefly in the back. For three months before admission she had been much worse, vomiting two or three times a day and not always after food. The vomiting was copious and gave her great relief. She occasionally found a streak of blood but never in any quantity. She thought that she had lost flesh considerably in the three months. The abdomen had been very tender and her nights disturbed. On admission she was a somewhat thin intelligent young woman with a decidedly tuberculous appearance, but healthy in all respects except as regarded her digestive organs. The appetite was bad and the tongue was very red and not coated. Vomiting occurred frequently and often large quantities of fluid were brought up (once three and a half pints of clear brownish fluid). On examining the abdomen a hard tumour of about the size of a hen's egg was noticed in the middle line between the ensiform cartilage and the umbilicus which moved with respiration. A curved ridge could be traced on the surface of the abdomen passing up from the tumour to the costal margin. There was a distinct depression below the ensiform cartilage. 10 days after admission the patient was given to drink five half-pints of weak boric lotion. The tumour moved to the right nearly under the eleventh rib, the curved ridge descended to about half an inch above the umbilicus, and there was dulness on percussion down to about two inches above the pubis. She subsequently vomited seven half-pints and the tumour was again found in the middle line, the dulness below the umbilicus disappearing.

Pyloric obstruction was diagnosed and efficient relief by medical means not being thought possible the patient was transferred to the surgical floor, and as she was willing to submit to anything that would give her a chance of recovery Mr. Prichard proposed to open the abdomen, thinking that a gastro-jejunostomy would probably be the operation best for her. Accordingly on April 8th, under ether, he made an incision in the middle line above the umbilicus and at once came down upon the stomach, which was dilated. A hard tumour of the size of a duck's egg was felt occupying the pylorus and adjacent end of the stomach. It was moveable and it was possible to lift it up out of the abdominal wound without much stretching. There were large glands in the greater and lesser omentum. An opening was made in the stomach well free of the growth and it was felt that the pylorus was narrowed and very hard and would not

[1] THE LANCET, March 24th, 1900, p. 838.

a limit the finger. It was then decided to remove the tumour instead of doing a gastro-jejunostomy. The duodenum was clamped between two pairs of Swain's clamps well beyond the growth and the bowel was divided between them. The divided pylorus was pulled over to the left and first the greater and then the lesser omentum were ligatured off in sections up to the point where the stomach was free from disease. This seemed to be about a quarter of the length of the stomach from the pyloric end. A Smith's clamp was then put across the stomach about its centre and the stomach was divided well to the cardiac side of the growth. The width at the part divided was between three and four inches. The cut edges of the stomach were sutured together, beginning from above, sewing the mucous coat with uninterrupted suture first and then the muscular and peritoneal coats afterwards. Having dealt with the upper two inches Mr. Prichard began from below and sutured in the same way the lower inch; this left an aperture of about one inch in diameter to correspond in size to the cut end of the duodenum. This cut end of the duodenum was then brought in contact with the opening left in the stomach and by a continuous stitch the peritoneal coats of each were united posteriorly. A continuous stitch was then taken the whole way round, dealing with the mucous membrane only, commencing at the back part. This stitch brought the mucous membrane of the duodenum in continuity with that of the stomach all round. The peritoneal coats at the top and bottom and in front were then sewn together, the stitch being continuous with that which had been put in the peritoneal coat behind. Many vessels had to be tied from time to time in the wall of the stomach and bowel and elsewhere. The parietal incision was closed in the usual way with silkworm-gut. All the other sutures were of silk.

The patient became a good deal collapsed about the middle of the operation, which lasted two hours, and two pints of saline solution were injected into a vein in the arm by Dr. E. H. E. Stack with much benefit. On getting back to bed a rectal injection of one ounce of brandy in five ounces of water was given. About two hours after the operation fluids were commenced by the mouth (one drachm of brandy in half an ounce of water every hour, and one drachm of Carnrick's liquid peptonoids in half an ounce of water every four hours). Nutrient enemata of brandy, bovinine, the yelk of an egg, and peptonised milk every four hours were given, and a hypodermic injection of a quarter of a grain of morphia at night. She had a comfortable night and retained all the nourishment given by the mouth and rectum. She passed urine and flatus, there was no vomiting, and the pulse was fairly good (100). On April 10th (two days after the operation) the nourishment by the mouth was increased, amounting to one ounce of fluid every hour, water gruel and albumin water being added. On the next day 30 ounces were given by the mouth in 24 hours, the bulk of the nutrient enemata was reduced, and the brandy was diminished. She improved every day, raw meat juice and chicken broth being added. The wound was dressed on the fifth day and was satisfactory. Bread crumbs were given in the chicken broth on the ninth day, and on the tenth day all the stitches were taken out, the wound being healed. She had sweetbread for dinner on the fourteenth day and on the 28th chicken and bananas. Except for one day when she was sick her convalescence was uninterrupted. This upset seemed to be simply a bilious attack. She now says that she feels better than she has done for years.

Remarks by Mr. PRICHARD.—As to the nature of the growth there is some little doubt. The section was so white and hard that it presented all the characteristics of scirrhous carcinoma; moreover, the glands in the immediate neighbourhood were enlarged and hard and the mucous membrane was ulcerated over the growth. But the microscope does not corroborate this. It is not scirrhus or epithelioma. Is it simply inflammatory or fibrous thickening of a scar of a healed ulcer or is it tuberculous? The patient's appearance favours the last opinion, but nothing was found to prove it. In conclusion, I must say that I do not take the credit of the success of this case all to myself. The patient was very well nursed and was of a very placid and nopeful spirit; but above all I have to thank Mr. H. F. Mole, our house surgeon, not only for his ready help at the time of the operation, but for his unceasing care in the regulation of the dietary afterwards. To him I believe the patient in no small measure owes her life.

HERTFORD INFIRMARY.

A CASE OF SPINAL MENINGO-MYELOCELE; OPERATION IN AN INFANT AGED 13 DAYS; RECOVERY.

(Under the care of Mr. R. ODELL.)

IN cases that admit of it removal of the meningocele by operation is the most satisfactory method of treatment of spina bifida; for Morton's method, though very well suited for pre-antiseptic days, cannot be looked upon as a satisfactory method except for certain pure spinal meningoceles. The very youthful age of the patient in the case recorded below renders it especially noteworthy. The commencement of sloughing of the skin made the operation imperative.

A female child was admitted into the Hertford Infirmary on May 17th, 1902, with a central swelling in the lower lumbar region of the spinal column; it was of the size of an egg, had existed since birth, and was gradually increasing in size. The skin over it was thin, bluish-red, and was commencing to slough centrally. It was non-pulsatile; the base of the tumour was surrounded by a ring of bone. There was fluctuation and pressure caused some diminution in bulk but did not affect the condition of the fontanelles. There was some incontinence of urine and fæces; the anus was patulous and the mucous membrane was slightly protruded. There was no evident loss of power in the legs and no trophic changes were present. The weight of the infant on admission was seven and a half pounds. At the operation the child was placed in the prone position, with the hips elevated and the head lowered. No anæsthetic was given. An incision two and a half inches long was made somewhat to the left of the middle line. The cord was found adherent to the sac wall and was carefully dissected off and returned into the spinal canal. The flaps of the membranes were brought together over it and were sutured with fine silk. The sloughing portion of the skin was removed and the remainder was brought together and joined by silk. A firm aseptic pad was used as a dressing. About an ounce of cerebro-spinal fluid was lost during the operation. There was some collapse on the evening of the operation and two normal saline injections were made in the flank with satisfactory results. The wound progressed favourably, the child gained one and a half pounds in weight during the two following weeks and two inches in circumference at the umbilicus, and the mother stated that there was increasing control over the sphincters. On July 26th there was a perfectly sound cicatrix and no recurrence of the tumour had taken place.

Reviews and Notices of Books.

Psychology, Normal and Morbid. By CHARLES A. MERCIER, M.B., M.R.C.P. Lond., F.R.C.S. Eng. London: Swan Sonnenschein and Co., Limited. 1901. Pp. 518 + xiii. Price 15*s*.

DR MERCIER has produced a work which is notable equally for matter and for style. The master of a facile pen, he has prepared himself for the task which he has undertaken by wide and critica reading, with the result that his book presents both a theory which is his own and a synopsis (not the less intelligible and instructive for being informal) of the best work that has been done before his time. Of his own work Dr. Mercier writes in his preface with conspicuous modesty that he has thought it better to publish the book "as it is, with all its faults," than to extend a delay in the course of preparation which threatened to be indefinite in duration. Of the conscientious labour by which he has sought to harmonise the whole and to incorporate in the chapters first written the emendations and developments which occurred to his mind as the work progressed there are many indications, chief among which is, we may remark, the high degree of coherence which he has actually given to a very discursive work. Probably no writer who has set himself to work out an elaborate argument ever felt

wholly satisfied with the whole result of his labour; the most have far less ground for such satisfaction than has our present author.

The subject of which he treats is psychology in the older sense of the term—approached, that is to say, from the subjective side. The "morbid" in the title is perhaps suggestive of the clinical aspect of mental disease, with which this work has very little to do. In fact, the morbid conditions which are treated here are regarded in the light of normal conditions working inharmoniously and no attempt is made to connect lesions with manifestations of mental alienation. The work is a serious effort to illustrate that most obscure of all regions of research in which one-half of the data are supplied by facts of consciousness and the other half by facts of observation. To correlate the one class of facts with the other involves the clearest as well as the deepest thinking and the thanks of all medical men are due to those few writers whom aptitude and education have fitted to extend the dominion of thought over this inhospitable region of philosophy. To Dr. Mercier a notable rank among such writers is due, for he adds to the copious knowledge to which we have referred a power of close and accurate reasoning and a facility in the statement of abstract propositions which are hard to find in combination.

The nature of the subject and the dimensions of Dr. Mercier's book make it impossible to review his work save in the most general way, and in a general sense it is not necessary to add to what we have already written, since such criticism as we should have to offer would not affect the estimate which the reader will have already formed of the unusual merit of this book. There is, however, one point of sufficient importance, although not capital, to call for mention in this connexion. Dr. Mercier, in discussing the relations of ideas to one another, builds largely upon the analogy of mathematics and in particular of the rule of three. The value of this analogy cannot be denied but we suspect that our author over-estimates it, and whatever may be thought of its merit as a guide through the intricacies of related thought we are clear that he relies too much upon it as a form of expression. Much that he writes is rendered more difficult without becoming the less obscure by being cast into the formula $a : b$ in the various and complicated forms in which this expression recurs *passim* throughout the work. That is our single depreciatory remark.

Small-pox: How it is Spread and how it may be Prevented. By JAMES WALLACE, M.A., M.D. Glasg. London: H. J. Glaisher. 1902. Pp. 69. Price 2*s.* 6*d.* net.

IT is frequently remarked as a matter for regret that the valuable material contained in the report of the Royal Commission on Vaccination with its several appendices should be hidden away in more or less inaccessible blue-books. Dr. Wallace's work, which is based on the inquiry which Dr. T. D. Savill held on behalf of the Commission into the epidemic of small-pox at Warrington in 1891—92, is therefore very welcome at the present time, when anything concerning small-pox is of special interest. This inquiry was of especial value for several reasons. In the first place, Warrington was in 1772—73, in pre-vaccination times, the scene of an outbreak of small-pox the like of which has not been known since the introduction of vaccination. The opening chapter of Dr. Wallace's book treats of that epidemic. At that date the mortality was 12 out of every 29 persons attacked, and 26·4 per 1000 persons living, as compared with 0·6 per 1000 in the vaccinated population during the epidemic of 1892-93. The causes, origin, development, and decline of the epidemic in 1892-93 are then narrated. The brief outline of the beginning of this outbreak is extremely instructive, proving the necessity of (1) early recognition of the disease by medical men; and (2) ample accommodation in isolation hospitals. The relations of small-pox and vaccination are next discussed and statistics are freely quoted, demonstrating respectively, (1) the power of vaccination to protect from small-pox; (2) its efficacy in modifying the disease; and (3) the duration of the protective power of vaccination. Under this last heading the statistics illustrate the variation both in the severity of the disease and in the case-mortality, according to the age of the patient and their vaccinated condition. The following chapter naturally passes to the consideration of the influence of revaccination. An interesting fact elicited by the Warrington inquiry was that the protection afforded by revaccination and that afforded by a previous attack of small-pox respectively are in general terms almost equally efficient. Dr. Wallace puts this somewhat strongly when he says that "revaccination affords more protection against small-pox than a previous attack of the disease does." As regards the duration of the power of revaccination it is interesting to note that of all the revaccinated persons in Warrington not one of them contracted small-pox who had been revaccinated a shorter period than seven years prior to the date when he contracted the disease. The influence of revaccination is further shown by the rapid diminution of the disease starting 14 days after revaccination had been extensively performed in the principal "works" of the town. In view of the growing importance of this subject and inasmuch as there is strong evidence (as shown in Dr. Savill's report) to prove that the protective power of infant vaccination is largely lost after the age of 10 or 12 years, it would be well if Dr. Wallace in his next edition were to take statistics also from other sources—from Germany, for instance, where not only vaccination but re-vaccination is compulsory and where rumour says that small-pox is being stamped out in consequence. The closing chapters of the book discuss the diagnosis of small-pox, the methods of procedure in preventing it spread, and the effects of social and sanitary conditions on the disease. Particular mention is made of the fact that the inquiry into the epidemic at Warrington conclusively proved that the spread of the disease, which at first sight seemed to be due to aerial convection, could, if sufficient pains were taken in the investigation, be shown to be due in all cases to direct or mediate contagion. This is peculiarly interesting since another observer of the same epidemic had previously come to the opposite conclusion.

Dr. Wallace's little book should be in the hands of every busy practitioner and every intelligent layman who desires facts, as distinct from theories, concerning small-pox in a small compass concisely and clearly stated. It is well printed and bound and the chief points are rendered easy of reference by paragraph headings in conspicuous black type that readily catch the eye and remain in the memory. It is by the issue of such books as these that that section of the public which approaches these questions with an unprejudiced mind can be enlightened on so many points upon which enlightenment is needed.

Public Health and Preventive Medicine. By C. J. LEWIS, M.D., D.Sc. (Public Health) Edin., and ANDREW BALFOUR, M.D., B.Sc. (Public Health) Edin., D.P.H. Camb. Edinburgh: William Green and Sons. 1901. Royal 8vo. Pp. 658.

THIS is an ambitious and very comprehensive work which has, in our view, fallen a little short of the ideal which the authors set before themselves; it is, nevertheless, a work of a high order of merit and worthy of attention. But the ground which the authors have endeavoured to traverse cannot well be properly covered even in a volume of this size and the concentration which has, more particularly in

certain directions, been attempted has, we fear, deprived some of the subjects of much of the interest which naturally attaches to them. Although this is our general impression there is much to commend in the work which, by the way, contains numerous and excellent plates, both coloured and plain.

The arrangement of the work is original. There are five sections. The first 124 pages deal with Medicine in Relation to Public Health, and the remaining four sections are devoted successively to General Sanitation, Sanitary Engineering and Building Construction, Vital Statistics, and Sanitary Administration and Sanitary Law. It is in the treatment of the first section that the authors have taken what is practically a new departure. In the description of each of the communicable diseases its bacteriology receives prominent and fairly full consideration, which has tended to accentuate the difficulty of dealing adequately with all the subjects which the authors have decided to embrace in their treatise. It has, too, led to a lamentable curtailment of what may be called the epidemiological aspects of the several diseases, and it is this which is, in our opinion, the weakest side of the work. This is more particularly the case seeing that the book is written, according to the authors' preface, primarily for those about to take the diploma of public health. It is essential in a text-book to maintain, as far as possible, the interest of the student and to furnish him with facts which he will easily retain in his memory. The many outbreaks of enteric fever which have been so well investigated are read even with avidity by the student, but in the book before us there is but scanty reference to any of them, and none are dwelt upon in at all a readable fashion. A similar remark applies to many of the other diseases treated of. For instance, small-pox, concerning which every student of public health should be well posted, is disposed of in under two pages, and in the case of plague the bubonic type is dwelt upon fairly fully, but the pneumonic and septic types are passed over lightly. But for this relegation of the epidemiological aspects of the several diseases to a relative obscurity the matter is excellent, and the coloured plates of bacteria and parasites are some of the best that we have seen. If the student can master all the details he need have no fear of his examiner, but the tax on his attention and memory will be a severe one.

The diseases of occupation and alimentation are very concisely dealt with, although the matter takes too much the form of a notebook—an elaborate and well-arranged notebook, be it understood—to form easy reading. The section on General Sanitation comprises meteorology, climate, air, soil, disinfection, preventive inoculation, school hygiene, &c., and much of it is very good. But vaccination ought to have been more fully dealt with and it seems a little out of date in these days of general vaccination with glycerinated calf lymph to point out that "arm-to-arm vaccination requires great care in the selection of vaccinifers." Only a few lines are devoted to preventive inoculation other than vaccination. The section on Sanitary Engineering and Building Construction embraces a somewhat heterogeneous collection of subjects, such as ventilation, warming, water-supply, and sewage disposal, and in connexion with this latter subject less space might well have been devoted to chemical methods and more to biological. The section on Vital Statistics is well written, although we are rather surprised to find the seasonal prevalence of infectious diseases under this heading. The principles of Sanitary Administration are admirably described and infinite pains have been taken to make the exposition of sanitary law complete and helpful. To this latter subject a large portion of the volume has been devoted and we cannot help thinking that the authors would have been well advised had they expanded the section on Medicine and relegated Sanitary Law to another volume. The fact is, a system of three volumes might well have been devoted to the subjects which the authors have attempted to compress into one volume.

This book, although, in our opinion, not perfectly fitted for students of public health, will be most helpful to medical officers of health and others who, being familiar with the general principles of the science, are anxious to refresh their memories and to bring their knowledge up to date. In this sense we wish the volume the success that it thoroughly deserves.

LIBRARY TABLE.

Epitome of the Synthetic Philosophy of Herbert Spencer. By F. HOWARD COLLINS. With a Preface by HERBERT SPENCER. Fifth edition. London: Williams and Norgate. 1901. Pp. 692. Price 21*s.*—This work, which is well known already, as the appearance of a fifth edition would alone suffice to prove, has been enlarged for the purpose of the present publication by the inclusion in the work of references to Mr. Spencer's now revised editions of the "Principles of Biology" and "First Principles." It serves the full purpose of a synopsis, such as it purports to be, of Mr. Spencer's system of philosophy and has been produced chiefly by the process of cutting off illustrative matter. In this way the voluminous works of the principal author have been collected into the manageable compass of this volume and made accessible to readers to whom time is wanting for the more extended reading necessary to make acquaintance with the originals. Such digesting work in reference to original matter of the character of Mr. Spencer's philosophy is of high value, and performed as it has been performed by Mr. Collins it fully merits the public appreciation which it has unequivocally received.

The Health Officer's Pocket-Book. By E. F. WILLOUGHBY, M.D. Lond. Second edition, revised and enlarged. London: Crosby Lockwood and Son. 1902. Price 10*s.* 6*d.* net.—This is the second edition of an eminently scientific little volume of 424 pages and of such dimensions ($6\frac{1}{2} \times 4 \times 1\frac{1}{4}$ inches) that, unlike many so-called pocket-books, it may conveniently be carried about. The book is already well known to medical officers of health, as the first edition appeared in 1893, and it is therefore unnecessary to dwell in detail upon its contents. As Dr. Willoughby states in the preface to the first edition, the medical officer of health and the sanitary inspector are frequently called upon to give impromptu advice when they are out of reach of the books kept in the public offices, and it is to them that this collection of "facts, figures, and formulæ" will strongly appeal. The data are collected with a due regard to the frailty of the human memory, and not only will many of them be found useful when the medical officer of health is away from home, but the tables of logarithms and the mathematical data generally will prove helpful in the compilation of annual reports and in the calculation of dietaries. In a word, the volume is well-fitted both for a pocket- and a desk-book. In the second edition much of the volume has been rewritten and the whole book has been revised and brought up to date. Part I. treats of practical hygiene, and Part II. deals concisely with sanitary law, embracing in abbreviated form the Public Health (London) Act, 1891, and the Public Health Act, 1872, together with notes on these two Acts. There is also a "comparative view of health Acts" in which the corresponding sections of the two principal Acts are arranged in parallel columns. There is, moreover, a capital summary of other Acts relating to the public health, including the Factory and Workshops Act, 1901. The appendices embrace useful information and there is a good index. In Appendix B it would have been better had the new statistical tables of the Local Government Board been introduced rather than that the old Tables A

and B should have been retained. But we can cordially commend the volume as one which will be found most useful to the officers of sanitary authorities.

Health, Speech, and Song: a Practical Guide to Voice Production. By JUTTA BELL-RANSKE. With 18 Illustrations. London: Swan Sonnenschein and Co., Limited; New York: E. P. Dutton and Co. 1902. Pp. 159. Price 4*s.* 6*d.*—Mrs. Bell-Ranske attacks the problem of so-called voice production in a methodical way, dividing the analysis of the component parts into the vocal organ, the motor elements or breath, and the resonator. The vocal organ is considered as an element. This is a little difficult to grasp and the wording of this chapter leads us to the opinion that the author herself found it as difficult of expression. We must own that it fails to convey any lucid impression to us. Here is one sentence which shows the knowledge on which some of the statements are based: "The vocal cords lie stretched across the larynx, fastened in front where the shoulders meet in their angle, and at the back to two small pyramidal muscles (the arytenoidei) which are fixed on the upper ring of the windpipe." The false cords are said to act in contrary motion with the true, which is a phrase also hard to comprehend. And when we are gravely informed that the only muscle that remains to be mentioned is the epiglottis it is obvious that knowledge is necessary in order to describe the anatomy of the vocal organs. The various ideas of the so-termed schools are described in detail as the "Larynx School," the "Pharynx School," and the "Resonance School." Undoubtedly Mrs. Bell-Ranske has a keen appreciation of the great necessity of efficient natural respiration and of the great importance of chest development, while the importance attached to a proper carriage and deportment generally s extremely practical But in the advice to singers Mrs. Bell-Ranske appears to be unable to express intelligibly what she wishes to say.

New Inventions.

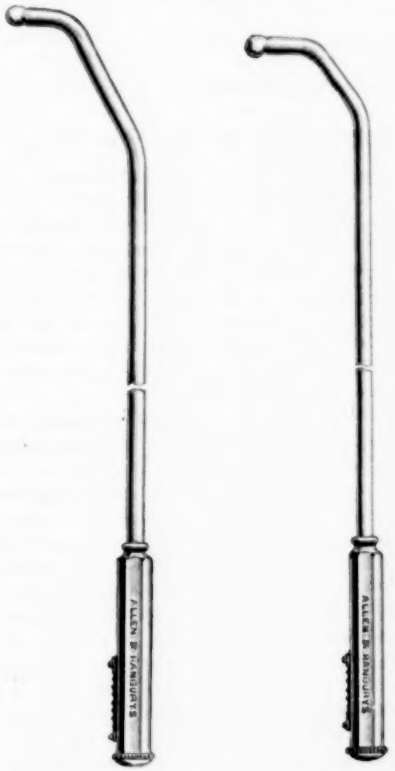
A URINE SPECIMEN BOTTLE.

MOST practitioners must have suffered at one time or another from leakage from bottles containing specimens of urine which they have been taking home to test, and many must have found strange and unwonted substances in specimens sent them in bottles provided by their patients owing to the bottles having contained medicine and being used without being efficiently washed. To obviate these *contretemps* I have had some urine bottles made for me by Messrs. Down Bros., one or two of which I carry with me in my bag on my rounds, and use for taking home any specimen of urine I may wish to test. They are two-ounce stoppered bottles with a wide mouth, the mouth being wide enough to admit an ordinary urinometer. Each bottle is provided with a place for writing the name of the patient and the date, and they are inclosed in boxwood cases so that there is no danger of any leakage. I find them much appreciated by patients, especially those whose urine has to be examined at regular intervals, and they have been a very great convenience in my own work.

Ryde. H. CARTER THORP, M.A., M.B., B.C. Cantab.

TWO USEFUL BLADDER SOUNDS.

I CANNOT find that the adaptation of the useful bi-coudée catheter bend has been applied to sounds and this seems a little remarkable. These sounds are, of course, intended chiefly for prostatic cases, although not exclusively. Everyone knows the difficulty of using, and the deficiencies of, ordinary sounds in many cases. The beaks of these sounds are at right angles to the shafts and this, together with their shape otherwise, renders them capable of extending over, and searching behind, the enlarged lobes. The chief advantage, however, is the ease with which I find them to pass. Both sounds are flattened at the convexity and flattened and narrowed at their beaks from side to side, these improvements rendering them easy to pass over enlarged middle, and between approximated, lateral prostatic lobes. The sounds are made by Messrs. Allen and Hanburys, copies of some I made myself a considerable time ago.



Finsbury-pavement, E.C. JAMES MACMUNN.

PLYMOUTH BOROUGH ASYLUM.—At the meeting of the Plymouth borough council held on August 11th tenders were accepted for the extension of the Plymouth Borough Asylum at a cost of £35,967.

CRUELTY TO LIONS.—The Royal Society for the Prevention of Cruelty to Animals recently obtained at Dorchester the first conviction under the Wild Animals in Captivity Act, 1900, in regard to lions. The defendants were the proprietors of a travelling menagerie and were charged with causing cruelty to a lion and lioness by insufficiently feeding them. One of the defendants admitted that they had had a difficulty in getting food for the lions, but he denied that they suffered in consequence; his brother gave a performance as usual, putting his head into the mouth of one of the lions, and if it had been starving it would have attacked him. Each of the defendants was fined £1.

THE LANCET.

LONDON: SATURDAY, AUGUST 23, 1902.

ne Surgery of Chronic Dyspepsia.

IN the present number of THE LANCET appear two papers which serve to show very clearly the immense benefit which surgery may afford in certain cases of chronic dyspepsia where the symptoms make life unbearable. One paper is by Dr. T. KENNEDY DALZIEL, professor of surgery in Anderson's College, Glasgow, on 30 Cases of Gastro-enterostomy for Non-malignant Affections of the Stomach, and the other is by Mr. A. E. BARKER, surgeon to University College Hospital, on Some Cases of Operation for Chronic Non-malignant Disease of the Stomach.

Chronic dyspepsia has from time immemorial been one of the greatest opprobria of medicine. Judicious medicinal and dietetic treatment relieves many of the cases, but there are still many remaining in which all ordinary treatment fails to do any permanent good. The immediate danger to life is small—for here we are not speaking of malignant disease—but existence is a burden. Unless the greatest care is devoted to the diet discomfort and pain will torment the patient for hours after a meal and often relief will only be obtained when the stomach rejects its contents. Sometimes the vomiting may be profuse, many pints being brought up. The food, whether ejected or retained, fails to nourish. Emaciation, often extreme, naturally follows. The sufferer, worn out with pain and weakened by lack of food, falls at length into such a state that death itself comes as a relief. Even when the symptoms are not so extreme they are sufficient to interfere with ordinary life. The patient is able to devote himself to only a very limited extent to his work. He cannot forget his dyspepsia; his mind is centred in his stomach; his diet, his beverages, his symptoms occupy his whole attention and he has none to devote to the ordinary concerns of life. Every medical man can testify to the correctness of this picture. Fortunately, such extreme cases are not very common, but instances of a milder type are often met with, and everyone must acknowledge how little relief is to be expected from drugs. There are doubtless some of these cases of disease which are functional in origin and in which the most minute examination of the stomach and abdominal viscera after death cannot reveal any lesion, but these form the exception, for in the majority of cases a necropsy will show some definite structural change to which may reasonably be attributed all the symptoms. For many years a connexion between these chronic dyspepsias and some definite organic disease of the stomach was hardly suspected. They were not cases likely to be detained in hospitals for any length of time and therefore would but rarely come to a necropsy, for post-mortem examinations are very exceptional outside hospitals. But it came gradually to be recognised that in many cases some definite structural change could be found, and now it may confidently be laid down that in the vast majority of cases of severe chronic dyspepsia the disease is not merely functional but has an organic basis. The conditions discovered on examination are very various, but it is remarkable that a large proportion of them result from the healing of simple gastric ulcers. As the ulcer heals it contracts and so may lead to constriction of the pylorus, if it be situated near that orifice. On this constriction follows the whole train of symptoms associated with dilatation of the stomach. Should the ulcer be placed more nearly in the centre of the viscus its cicatrisation may lead to a mesial narrowing so as to produce the "hour-glass" stomach. Again, as a gastric ulcer extends in depth it may form adhesions to surrounding viscera. When the ulcer has healed these adhesions remain and may produce tractions on the stomach itself or on neighbouring organs, or obstruction of the duodenum. These are the chief lesions discoverable, but many variations and combinations of them may be found producing great variety in the details of the symptoms. In some of the cases described in Dr. DALZIEL'S paper adhesions were the result of peritonitis originating from old tuberculous glands behind the pylorus, and these adhesions prevented the emptying of the stomach. Sometimes, again, the gastric muscular movements may be interfered with by firm broad adhesions.

For all these cases medicine is of little avail. A carefully restricted diet and the administration of gastric sedatives and antiseptics may lead to some remission of the symptoms or even to great improvement. The relief is, however, but temporary and a return of all the discomfort and pain follows at once on a return to ordinary diet. In cases where there is gastric dilatation great relief is often experienced from washing out the stomach regularly, and this "lavage," as it is called, is by no means so unpleasant to the patient as might be expected—in fact, it is frequently asked for, as the patient recognises the good it does. Lavage is useful, too, even when no dilatation of the stomach is present, for it removes from that organ the undigested decomposing residue of the last meal. Lavage, however, is at the best but a palliative, and operative interference is needed to produce permanent results. Of all the operative methods of treatment for these cases there is one the results of which are more satisfactory than those of any other. This is gastro-enterostomy, the lateral attachment of the upper part of the jejunum to the stomach. Its mode of action is two-fold. In the first place it enables the stomach to empty itself completely and easily, so that accumulation and decomposition of the contents are no longer possible. This is the way in which so much benefit is obtained from it in cases of non-malignant pyloric stenosis. There is yet another method by which gastro-enterostomy does good: it affords physiological rest to the stomach, and this is of vital importance in cases where that organ has been incessantly irritated for months or years. The operation is best preceded by lavage of the stomach for several days to render it as free from micro-organisms as possible.

What are the results? For on the excellence of the results depends the justifiability of the whole operation. First as to the mortality. In capable hands this is exceedingly low—probably not over 3 per cent. Secondly, as to

the effect on the symptoms. The relief in most cases is immediate, great, and permanent. The emaciation rapidly disappears, the dyspepsia vanishes, and ordinary food can be taken with impunity. Of course, so completely successful a result is not obtained in every case, but the benefit is nearly always striking. Care must be used in the selection of cases suitable for operation, for only harm can result from indiscriminate laparotomy. The symptoms must be of sufficient severity and duration to justify having recourse to an operation which, however carefully and intelligently performed, cannot be free from risk. But in suitable cases the results are worthy of an age of surgical progress, as will be at once obvious from reading the two contributions to our columns which have prompted these words.

Hospital Abuse.

AT the recent annual meeting of the British Medical Association Dr. ALFRED COX of Gateshead and Mr. J. T. J. MORRISON of Birmingham both called attention to the fact that in some towns it was the working-class vote that would predominate in the management of hospitals. There is no reason why working-men should not contribute their share to the public charities, but that is not the way in which they view their subscriptions to hospitals. They have been accustomed to subscribe to friendly societies, to medical aid clubs, to slate clubs, to trades unions, and other such institutions. In each and every case the money they give comes back to them in hard cash or in services rendered, and, further, they generally have a vote in the management of the funds which they thus raise. Consequently they naturally imagine that if they support the hospitals they should not only have a vote in the management of the hospitals but that the hospitals are bound to render them services in exchange for the money subscribed. The workmen do not give to the hospitals as an act of charity but they pay so as to wipe out the charitable aspect of the institution. They propose to purchase, as it were, a right of entry to the hospital and a right to be treated, not as the recipients of charity, but as provident people who have insured themselves against the risks of sickness or accidents. This is the feeling that undoubtedly prevails, though it has not yet been formally inscribed in any document, agreement, or covenant.

Our Special Commissioner in the series of articles on Hospital Abuse gave a very full account some five years ago of the growth and development of the Birmingham Hospital Saturday Fund.[1] At that time it was estimated that 75 per cent. of the workmen of Birmingham subscribed to this Fund and they raised about £15,000 in the year. Now we are told that they subscribe £18,000, and therefore, perhaps, more than three-fourths of the working-classes are at present involved in the movement. As most of the money is raised by means of penny weekly subscriptions this would mean that there are some 83,000 subscribers. The total population of Birmingham, including women and children, is set down at 478,113, therefore it is safe to say that the vast majority of the working-men are subscribers. Besides, they also subscribe several thousands of pounds direct to various hospitals, obtaining tickets in exchange, and this is done over and above their subscriptions to the Hospital Saturday Fund. Taking the total annual revenue of the hospitals in Birmingham as about £41,000, if the working-classes were to withdraw their support the hospitals would at once be bankrupt. They know this and they feel that they are masters of the situation. This is all the more the case as with the increase of working-class support there has been a decrease in the amount of subscriptions received from the wealthier classes. Though less accentuated than at Birmingham, the same state of affairs is noted in other towns. Our Commissioner pointed out that out of an income from all sources of £10,921 received by the Leicester Infirmary the donations from the working-classes amounted to £3187.[2] At Leeds the workmen's subscriptions represented about one-fourth of the total income of the hospitals,[3] and now Dr. ALFRED COX states that in the North of England, notably at Gateshead, the workmen subscribe such large sums that not only do they conceive that they are paying for the treatment they receive but maintain that they have a right to govern the hospitals, the move being directly towards the municipal ownership of the institutions. In dealing with Birmingham our Commissioner pointed out that if the majority voluntarily taxed themselves they would soon demand that the minority should be coerced into paying their share of the required contributions. Thus the subscription would be converted into a tax and the private funds would be replaced by the municipal administrations, which would manage the general hospitals as they already manage the hospitals for the treatment of the insane and for the isolation of infectious cases. This represents, of course, the extreme outcome of the present situation, but unless the hospitals should revert to the old system add take measures to obtain the bulk of their financial support from the wealthy and well-to-do classes it is the obvious issue.

The question has now entered into a vicious circle and every step taker only aggravates the difficulty. The more the workmen give the less do the other classes give. The more the workmen give the more general does the abuse of hospitals become, because giving such large sums in the aggregate they do not see that they are not contributing their just quota and are not really paying for service rendered. The more hospital abuse prevails the more disinclined will the well-to-do classes be to subscribe Practitioners in the poorer districts of the large towns say that it does not pay them to buy surgical instruments, for the minor as well as the more serious surgical cases now all gravitate towards the hospitals. Why should, for example, the parents, relations, or private friends of young practitioners subscribe to hospitals when these institutions are so palpably injuring the prospects of those in whom they take an interest? The knowledge is spread that the money of the charitable subscribers is being misapplied and the amount given therefore decreases. But this only leads the managers of hospitals to rely more and more on the working-classes and therefore they refrain from making inquiries when cases of abuse

[1] THE LANCET, Sept. 18th, 1897, p. 745.

[2] THE LANCET, May 15th, 1897, p. 1374.
[3] THE LANCET, Feb. 13th, 1897, p. 483.

are signalised lest subsidies that have now become valuable should be withdrawn. For the Coventry Hospital the working-classes gave £300 more in 1896 than in 1895, the other classes £123 less, the country parishes £10 18s. less, and the legacies were £70 less. The working-men subscribed more than a third of the total receipts and insisted on having 45 working-men governors appointed.[4] It is true that the agitation against hospital abuse has led to a few reforms here and there, but such sporadic attempts will not meet the case. Also, even if they are successful they will assuredly reduce the amount subscribed by the working-men who thoroughly believe in their legal right, having paid their pence, to hospital treatment in all circumstances. They do not see that the medical work of the hospitals is done by medical men gratuitously because they are charitable institutions, and for no other reason whatever. At paying hospitals the fees to be paid are not the pennies which the patients feel like giving but the sums which are considered to represent the value of the services rendered. All honour to the working-classes for giving as much as they can, but they must not give a penny and expect to obtain a pound in return as their inalienable right. This is a view which ought to be brought strongly before the public.

A Ministry of Public Health.

IN the development of any new social force there comes a time when the channel which in the first instance afforded a sufficient outlet for its energy is no longer adequate, and if the outlet be not enlarged by those who are in a position to recognise its insufficiency events resembling volcanic eruptions are likely to take place. At the present moment there are many thoughtful and moderate men, having at heart the advancement of preventive science and the improvement of the sanitary environment under which a large portion of the community lives and works, who feel that the hour is at hand when the channel by which the public health service of this country found expression a quarter of a century ago might usefully be expanded—that, indeed, such expansion is necessary and has been shown to be necessary by circumstances of an eruptive nature.

Those who chance to have read the remarks of the famous Dr. W. FARR in the supplement to the thirty-fifth annual report of the Registrar-General, and who will take the trouble to contrast the existing administrative machinery with that which obtained in 1875, will see that the programme therein outlined by the great statistician has in the interval been largely realised. We have now a medical officer of health for every sanitary area and in this sense Dr. FARR'S ideal is attained; but only a small proportion of such officers are as well qualified as could be wished, either in a scientific or administrative sense, for the duties which the State expects them to perform, and the pay is frequently altogether ludicrous. But, this notwithstanding, the strides made in sanitary science in every conceivable direction have been those of a giant, and it is not too much to say that the spirit of preventive medicine now permeates every branch of the public service and is an enormous force making towards the more wholesome living of all classes. But while this is so there has not been in the public health world that gathering together of the loose ends of work, or that concentration of the available energy, which is essential if the potential forces are to be employed with the greatest efficiency. The expansion and welding together of the empire and the general spread of scientific knowledge have outstripped in this country our machinery for the maintenance of public health. There is, it is true, an excellent nucleus for a broad and vigorous public health service for England and Wales, but, viewed in relation to the needs of the empire, the nucleus must have larger possibilities if it is to serve as an adequate centre for future development. The Medical Department of the Local Government Board is, in effect, the central health department of the country, but the Medical Department finds Parliamentary and public expression only through that somewhat heterogeneous collection of sub-departments known as the Local Government Board, of which it is but a branch. If we apply the usually accepted standard of value, that of status and pecuniary emolument, it must, we fear, be inferred that the Board does not set an over-high value upon its public health work. This is the more regrettable because, although there is perhaps scope for initiative on the part of the Board in matters appertaining to preventive medicine, the inquiries conducted by the inspectors of the Medical Department are conducted with a thoroughness and impartiality which merit and possess the confidence of the country. Were this department expanded and were the Board clothed by Parliament with greater powers for initiative action but little fault could be found with the nucleus of the Public Health Service. But the developments of recent years require, we think, that preventive medicine should bulk more largely in the aggregate of the Board's work and that the President for the time being of that Board should feel that he alone is responsible to Parliament and to the country for the health of the people. And this brings us to a question which is now frequently asked and which will soon be ripe for answer. Is not a further expansion desirable? Ought there not to be a Ministry of Public Health? It would seem reasonable that the public health duties, which are at the present time scattered over several Government offices, should be focussed in one department and that all matters affecting the health of the empire should, in so far as the central health authority is concerned, be dealt with in one department. Such an office should be the public health and statistical bureau of the empire, where uniformity in statistical methods and the nomenclature of disease should be arranged and where the public health material should be digested and turned to the best account. This is, we are fully aware, a somewhat ambitious scheme, but the aspirations of the empire are in no direction characterised by undue humility, and expansion in the furtherance of knowledge and the improvement of the public health are surely among the elementary duties which devolve upon us in consequence of our greatness.

Those who are opposed to the creation of what we have spoken of as a Ministry of Public Health base their very reasonable objection upon the belief that it is better for the cause of public health that the functions relating thereto

[4] THE LANCET, April 17th, 1897, p. 1118.

should be exercised by a large department having a Minister of Cabinet rank as its mouthpiece than by a small office having no such advantage. We cordially agree with this, but it seems to us that a department having for its work the programme which we have here delineated might well have a Cabinet Minister at its head. This question of the formation of a Ministry of Public Health is likely to receive the attention at an early date of one or more societies concerned with the administrative side of preventive medicine, and it is for this reason that we set forth certain points for consideration. There is no doubt that the public health service of the country cannot cope with the demands laid upon it by modern scientific knowledge, a position which is bound to get worse. Sooner or later a big piece of constructive work will have to be done and the right man should be found to do it. It would be worse than useless were the matter to be taken up by persons open to the charge of personal aggrandisement, while only those who understand public health questions, their difficulty, delicacy, and importance, can realize that our present condition is not perfect. But the moment is opportune in many ways for the consideration of the whole matter. The blessing of peace has been given to us, while the lessons of the war point straight to the necessity of an efficient and up-to-date public health service. It would be idle to suggest that so radical and immediate a change as the formation of a Ministry of Public Health should be made with a member of the Government of Cabinet rank at its head. We do not expect such an innovation; but we do expect that the new Government, doubtless starting with keenness on its work, should give the question of the public health of the country its best attention. And we believe that the most practical way of displaying knowledge of the present position, and of the future to be provided for, would be to consider seriously the formation of a bureau of public health.

Annotations.

"Ne quid nimis."

TUBE RAILWAYS.

WE publish in another column an article upon tube railways which we commend to the notice of our readers. The limitations of the article are definite, for we make little attempt to go outside our province and to deal with the construction of tube railways, while our remarks on engineering problems of every kind are conspicuously absent. We have simply considered the tube railways now in construction in London, and in great probability shortly to be constructed in most overcrowded capitals, as a departure in social life which must have many more or less medical bearings. It is possible that some of our readers will in the near future be asked by their patients such questions as the following: Are the tube railways safe from accident—as safe, that is, as any railway can ever be made? Supposing the precautions taken to be adequate, are the proper means provided for minimising disaster? Are the tubes properly ventilated? Will the vibration caused by the trains be so great as to constitute serious annoyance to the inmates of houses on the route? Questions like these cannot be positively answered, for it must be remembered that many points will not be made clear until the trains are actually running. All that comment and criticism can do at the present moment is to urge the necessity that rigid precautions should be observed to obviate the tubes becoming a source of danger or annoyance, and that advantage should be taken of past unfortunate experiences. There can be no doubt, we think, that, in London at any rate, some such development in passenger traffic as we are now witnessing is urgently called for. The schemes for the construction of deep-level railways now on paper, or receiving Parliamentary sanction, or actually nearing constructive completion, demand, we think, the general approval, if not the admiration in detail, of all who live in, or work in, or are interested in the welfare and business position of, London; and this latter section may be taken without exaggeration to imply all the citizens of our empire and all the trading classes of the world. The danger to health and life and limb in our overcrowded metropolis with its terribly congested traffic are very real and are increasing by leaps and bounds. It has become necessary that means should be provided whereby persons living at a distance from the business centre of the world can reach that centre at the expense of the minimum of time and trouble. Yet it is obvious that the easier the passage is made from the circumference to the centre the more congested the centre will become unless the increased traffic has new routes made for it. Such routes can only be placed above or below the existing routes; and it is well known that overhead railways are subject to the gravest disadvantages. Of underground railways two are possible, the shallow and the deep. There is much to be said for the shallow railways, and the London County Council is known to favour them; but the difficulty of construction is very great, the inconvenience caused during the work is incalculable, and the expense is proportionately high. This brings us to deep railways as the preferable solution for a problem that exists and grows daily, in London at any rate, harder to answer. Against deep railways it has been urged that their ventilation is faulty, and that the damage that they do to structures upon their route by altering the drainage and formation of the soil cannot be estimated. We think that this is a pessimistic view based upon conditions which experience will not allow to recur. The ventilation of the new tube railways is to be much more thorough than any previous scheme has provided for, and the promoters of one and all the lines are awake to the gravity of asking the public to pass long spells of time in grossly vitiated atmosphere. There is evidence that the precautions that are to be taken in the new tube railways for doing away with vibration are also very sound and thorough, while there seems no reason to suppose that any important settlements will take place if the tubes are constructed entirely in the deep-lying clay. Of course the gravel bed above that clay must be pierced at the stations for the admission of passengers, but every care known to the engineer having been taken to obliterate the space between the gravel and these shafts the wholesale injury to buildings on the route, which has been so generally anticipated, ought not to occur. It will not occur unless some of the most experienced engineers in the country are wofully out in their calculations. On the whole we think that we are in a position to assure our readers that the vast network of tube railways soon to be crossing and recrossing each other in the clay below London will not subject the public health to the strain that has been suggested, while the improved facilities for travelling ought to lessen the overcrowding which is now such a terrible source of disease in many quarters of the metropolis.

COUNTY COUNCILS AND CONSUMPTION.

THE attention paid by county councils to the treatment of consumption is a hopeful sign. Both the Lancashire and the

Cheshire councils are moving in the matter. At the meeting of the former on August 7th Sir John Hibbert moved the adoption of the report of the special committee appointed to consider the best method of appropriating the sum of £10,000 voted out of the county fund to commemorate the King's coronation. The committee unanimously recommended that it should be devoted to the establishment of an institution for the treatment of cases of consumption arising in the administrative county. Sir William Houldsworth, while agreeing, doubted the possibility of doing much with so small a sum, and suggested that it might be possible to come to some arrangement with the hospital which Mr. Crossley is providing for Manchester and Salford in Delamere Forest. After some discussion Sir John Hibbert agreed that the matter should be postponed. At the meeting of the Cheshire county council held on the same date Mr. W. Hodgson drew attention to the same subject and spoke of the "magnificent sanatorium in Delamere Forest" provided by the munificence of Mr. Crossley. He thought, however, that the Cheshire council might be able "to do a sufficient thing, probably at somewhat less cost, and spreading the cost over the whole county it would not be much for each authority." The public health committee of the council had thought that nothing could be done unless notification were compulsory, but on inquiry at the Local Government Board this was found to be an error. The report of the committee to the effect that it was desirable for a sanatorium or sanatoriums to be established in the county was approved and it was agreed to send it to the local authorities together with the gist of the letter from the Local Government Board. With regard to Sir William Houldsworth's suggestion as to negotiating with the Delamere hospital it should be remembered that the Liverpool sanatorium is not much more than half a mile away and it does not seem desirable to bring too many of these institutions to the same locality. Lancashire has many most salubrious sites quite as good as that of Delamere.

SOME ADVANTAGES OF A RAINY SEASON.

THE summer of 1902 so far has been horrible. It is the more unfortunate that it has been so as it was the year set apart for great national rejoicings. To the majority it may be a source of satisfaction that grumbling is justifiable, and he who can cast about for and find a few redeeming features in regard to the excessively unpropitious weather which we are experiencing proves the possession of virtuous content. One fact may prove a solatium, and that is that it was impossible to run away from the weather by leaving England, for equally bad, and in some cases a good deal worse, weather has been the rule apparently over the whole world. Certainly in many places where highly favourable weather so often obtains the conditions have been worse than those prevailing in the British Isles. Italy, for example, has been visited with snowstorms and a cold season has been recorded which for its bitterness appears to be without precedent. Other countries reported to be commonly blessed with sunny skies have shared the same experience. In this fact, perhaps, may lie a crumb of consolation, but it is small. Greater consolation surely may be found in the fact that in London, at any rate, and in many other big manufacturing towns the almost torrential rain which has been experienced during the last few days has provided us with a wonderfully clean and clear air. The freshness and transparency of the air of London are well-known effects of a sharp rainstorm. The continual bombardment of the air by millions of pure water-drops exerts a mechanical effect, a physical effect, and a chemical effect, all of which play a part in a hygienic purpose. There is the mechanica effect of removing suspended particles—dirt, dust, smoke, micro-organisms—and carrying them to earth; there is the physical effect of a difference of electric potential being relieved, removing a stress responsible perhaps for headache and a depressed feeling; and finally, there is a very important chemical effect by which the air is freshened. There is no doubt that the rapid passage of water-drops through air exerts a bracing effect upon it, which is probably due to the formation of peroxide of hydrogen which gives invigorating properties to the air, and, as is well known, will easily destroy unseen impurities. These interesting facts, though affording, perhaps, feeble consolation to those who have gone to seaside and other places where the air is naturally pure, are probably of the greatest moment to those busy workers compelled to remain in the industrial hives of the towns, for by abundant rain a close, grimy, stifling atmosphere is thoroughly washed and freed from all impurities and made healthy, bracing, and bright.

MENTAL DISORDERS OF CHILDREN.

PROFESSOR F. X. DERCUM of Philadelphia has contributed to the *Philadelphia Medical Journal* of July 19th and 26th last an important paper on the mental disorders of children in which an attempt is made to reduce to order from a condition of something like chaos this complicated and somewhat neglected subject and to point out some of the natural characteristics and affinities of the groups of nervous affections concerned. Childhood is taken as embracing the period from birth to puberty. It is pointed out that idiocy and imbecility are met with in children, but that insanity as ordinarily understood is rare. The following four classes of idiots are recognised—viz., first, idiots with morphological anomalies of cranial, facial, and bodily formation, but without gross destruction of parts of the brain—e.g., those of the microcephalic and "Mongolian" types; secondly, idiots with gross cerebral lesions resulting in paralysis and contractures—e.g., many epileptic, paralytic, syphilitic, and traumatic cases of idiocy; thirdly, cretins; and, fourthly, amaurotic idiots belonging to the "family" type. With this last form of idiocy several children of one family are affected. As a rule, adds Professor Dercum, nothing special is noted in patients of the last class until the child is about six months old, when arrest and deterioration of development supervene in association with progressive blindness and death follows shortly after. This affection is essentially progressive, and destructive changes have been described as present in the nerve-cells of the cerebral cortex, basal ganglia, and spinal ord. The last two forms of idiocy enumerated above are, says Professor Dercum, distinctive forms which bear no relation to the first two forms or to each other. Children, it is pointed out, suffer quite frequently from delirium and mental confusion and occasionally also from stupor. These three forms of mental disturbance constitute another group of the mental affections of childhood. Such disturbances may occur as the result of febrile disease, shock, injury, fear, or prolonged excitement. Vivid hallucinations are developed and the child appears to be in a condition of unreasoning fright or terror. Melancholia, mania, and progressive systematised delusions like those of paranoia form a third group of affections. They are met with rarely in childhood, probably because of the incompletely developed condition of the brain and ego before adolescence. Insanity may be foreshadowed in childhood but is seldom developed until after puberty. Suicide in children is very rare as an outcome of melancholia. Some children exhibit neurasthenic symptoms in the form of abnormal fears, painful indecision, and strong impulses to destructive and criminal acts. Such symptoms, vague at first, may prove to be the prodromata of a serious form

of mental degeneration coming on in after years—viz., dementia præcox. At the approach of puberty such children are liable to exhibit periods of great exaltation and depression of spirits or of intellectual precocity and promise. Within a few months or in one or two years, however, signs of mental dulness and deterioration will appear. If concomitant physical disturbances, such as insomnia and cephalalgia, loss of appetite and feeble circulation, are present there is danger of threatened mental breakdown and dementia. The most potent favouring cause of insanity in these cases is the presence of an hereditary taint. The case will then probably develop into one or other form of dementia præcox, which constitutes another group of the mental affections of childhood or youth. Among the "neurasthenic" group of symptoms Professor Dercum also includes incorrigible tendencies to vagabondage and prostitution in young persons of both sexes. It is important, concludes Professor Dercum, that all neurasthenic symptoms should be diagnosed and treated early. Children with finer intellectual endowments than their fellows require especial care when suffering from such symptoms, and their treatment should consist mainly in rest from work or study, out-of-door living and occupation, massage and hydro-therapeutics, a generous diet, and the administration of tonics and laxatives to correct anæmia and to prevent the accumulation of auto-intoxication products in the bowel. In cases with a tendency to stupor good results have sometimes followed thyroid medication.

THE PISTOL AGAIN.

WE have not referred to this subject recently, but the newspapers on Monday, August 18th, contained details of no less than three revolver tragedies, which so forcibly illustrate the dangers caused by the unrestricted sale and carrying of firearms that we desire to call special attention to them. The first case is that of the gentleman who was shot in Gloucestershire by a friend with whom he was bicycling, after which the murderer travelled to London and committed suicide at a hotel. Two deaths are thus recorded with regard to which the unrestricted carrying of the revolver is the important point, for the position of the parties suggests that the mere cheapness of firearms was not a fact which influenced them. This points to the desirability of a licence for carrying pistols being issued upon terms implying some publicity and more inquiry into the character of the applicant than is the case with a gun licence. In this instance, it will be observed, two pistols played their part, for the murderer left the first at the scene of his crime but had no difficulty in surreptitiously borrowing another from his brother on returning to London. It would be difficult to suggest that revolvers are necessary articles which these gentlemen lawfully carried for some useful purpose. In the second case to which we call attention a man at Coventry employed in the cycle trade called at a house where his wife was employed as a nurse in order to persuade her to resume cohabitation with him. This she refused to do, so he proceeded to shoot her, inflicting a severe wound, while he followed his attempt at murder by killing himself. We ask if there is any reason why a man such as this should be able to buy a pistol for 5s. without any questions being asked as to his identity, his character, or his intentions? In the third case, which was reported in the evening newspapers upon the day mentioned, a ship's cook was charged at the Thames Police-court with attempting to murder a flower girl who had refused to marry him, with causing bodily harm to two other flower girls, and with attempting to commit suicide. The prisoner, according to the evidence given, shot the first girl after calling her towards him, pursued the others as they ran away, firing several shots at them, of which two took effect, while the others apparently spent themselves in the public street without happening to do any harm, and then, so we gather, a miss-fire prevented the final tragedy. As these cases are all still the subject of inquiry we add no more with regard to them except to express a wish that juries should realise in all cases the unnecessary ease with which firearms can be bought and the danger thus inflicted on the community. Juries' presentments are not perhaps very effective in promoting legislation, but they play their part in calling attention to scandals and have some influence on public, if not on official, opinion. Three deaths and four woundings make a long list to be recorded in a single day, and no doubt many such cases do not find their way into the London newspapers, to which alone upon this occasion we have referred.

THE DISTRIBUTION OF PLAGUE.

A TELEGRAM from the Governor of the Mauritius, received at the Colonial Office on August 16th, states that for the week ending August 15th there was 1 case of bubonic plague and no death. As regards Egypt, a Reuter's telegram from Cairo, dated August 17th, states that the total number of cases since April 7th is 279, of which 156 have ended fatally. As regards Hong-Kong a telegram from the officer administering the Government, received at the Colonial Office on August 19th, states that for the week ending August 16th there were 12 cases of plague and 12 deaths.

THE BRITISH PHARMACEUTICAL CONFERENCE AT DUNDEE.

A VERY successful meeting of the British Pharmaceutical Conference was held in Dundee during last week. The proceedings commenced by an address from the President, Mr. G. C. Druce, M.A., F.L.S., which was delivered on Tuesday evening, August 12th, before a large gathering in the Dundee University College. On the last occasion of the visit of the members of the British Pharmaceutical Conference to Dundee, which was in 1867, the late Professor Bentley was elected President, and he chose for his address the subject of botany considered practically and scientifically as an aid to the pharmacist. Since that time the business of the pharmacist has, like most other businesses, felt the pressure of increasing competition, and nowadays it is but few pharmacists who have the opportunity of devoting any time to the study of systematic botany, however much that study may be calculated to enlighten him as to the medicinal properties of plants. To the modern pharmacist, unless such study be a hobby, it would mean the absorption of so much time which he could otherwise devote to the subjects—to mention one, chemistry—which more closely concern the practical side of his vocation. The President of the Pharmaceutical Conference this year, on the occasion of its thirty-ninth annual meeting, like the President of the last meeting held in Dundee in 1867, is an earnest student of systematic botany and it might have been expected therefore that he would endorse much that the late Professor Bentley had to say on the previous occasion, and such was the case. He described the progress of Scottish botany, mentioning the work of botanists in Scotland, and in alluding to the Scottish flora stated that Scotland has practically three-fourths of the plants known to grow in the British Isles. He concluded with some remarks emphasising the intellectual value and physical gain which the student of field botany might derive from a study of botany in the field. Such a study was not demanded for examinational purposes but it developed the powers of observation, stimulating the faculty of exploration, and was thus calculated to "lighten to some extent the gloom of ignorance which enshroud some of Nature's problems." At the business section of the meeting a series of excellent papers were read and discussed.

Amongst the more important were those on standardised official preparations, tasteless cascara preparations, alcoholic extracts, the preparation of galenicals, and other subjects of obvious practical concern to the pharmacist. Altogether, a very useful number of papers was read before the conference, followed by instructive discussion, and the year-book of the conference in which these proceedings will be published promises to be not less interesting than any of those of previous years.

THE PREVALENCE OF SMALL-POX.

THE following figures show the number of patients admitted to the various hospitals of the Metropolitan Asylums Board for the dates mentioned. On Saturday, August 16th, there were 6 fresh cases; on Sunday, the 17th, there were 3 fresh cases; on Monday, the 18th, there were 3 fresh cases; on Tuesday, the 19th, there were 2 fresh cases; and on Wednesday, the 20th, there were 2 fresh cases.

THE USE OF NARCOTICS IN THE TREATMENT OF INSOMNIA IN THE EARLY STAGES OF INSANITY.

DR. HENRY RAYNER has published a paper on this important subject in the July number of the *Journal of Mental Science*. The fact that deprivation of sleep produces more distress and a more speedy fatal termination than deprivation of food is proof of the predominant need of sleep by the brain and body. In cases of insomnia of some duration there is, says Dr. Rayner, a general disorder of nutrition, and this is nowhere more marked than in cases of incipient or threatened insanity in which wasting rapidly follows upon insomnia. The drugs generally used in procuring sleep, such as morphia, chloral, and sulphonal, adds Dr. Rayner, have an injurious effect on the nutrition of the body, and their dosage has to be increased to secure sleep if the drug has to be used for protracted periods. Such disadvantages, however, can be avoided by using prolonged baths and gentle massage as a sedative and hypnotic measure, as they not only induce sleep but improve bodily nutrition by promoting elimination of waste products. Narcotics, it is also argued, depress the cardiac, vaso-motor, and respiratory centres. The beneficial effects of narcotics, however, appear to be undoubted, but these effects are regarded by Dr. Rayner as being obtained at the expense of the brain, the nutrition and repair of which get slowly impaired by the use of narcotics. "My individual experience has led me gradually to discard the use of narcotics altogether in narcotic dosage, and to use them only at rare intervals in the hypnotic form and then only in the form of bromide or ..... alcohol." Dr. Rayner points out that many practitioners are too prone to use morphia or opium when insomnia exists and that the temporary benefit which follows as regards the restoration of sleep is often neutralised by the injurious after-effects resulting from the use of this drug. In the discussion which followed the reading of the communication at a general meeting of the Medico-Psychological Association in London, Dr. G. Fielding Blandford stated that the use of hypnotics was often imperative in the insomnia of early or threatened mental disorder, and that the benefit was very great and material. Paraldehyde had in his experience always proved a safe and excellent hypnotic. Dr. G. H. Savage emphasised the importance of procuring sleep in such cases if the threatened mental breakdown was to be averted, and stated that opiates and hypnotics were absolutely necessary. Hydrotherapy also was a valuable aid to procuring sleep in restless and agitated patients, and where mental distress was extreme he had seen the best results follow the administration of large doses of narcotics. Dr. Fletcher Beach concurred in the view that hypnotics, especially sulphonal, were beneficial in cases of insomnia, whether from nervous or mental disturbance, but he thought that a proper diet was also an adjunct to sleep.

CHOLERA IN EGYPT.

A REUTER'S telegram, dated August 17th, states that the total number of cases of cholera existing in Egypt at that date was 381. In Cairo on August 16th there were 32 cases with 23 deaths; at Alexandria 1 case was notified. The total number of cases since July 15th has been 2016, of which 1509 have proved fatal.

THE PREVENTION OF ENTERIC FEVER IN ARMIES.

IT will be remembered that when Dr. Leigh Canney put forward his scheme for safeguarding an army against enteric fever by ensuring that troops engaged on field service should be supplied with boiled water we strongly urged that his plan, instead of being simply talked about, should be practically tried. We are very glad to learn, therefore, that the War Office authorities have determined on doing this and that all the necessary apparatus and equipment for sterilising water will be made available for the purpose when an opportunity occurs for the experiment. There can be very little doubt, as far as the prevalence of epidemic typhoid fever of armies is concerned, about the part played by contaminated water. Sudden and severe outbreaks of enteric fever are often neither more nor less than examples of wholesale water-poisoning.

A TESTICULAR CYST CONTAINING ACARI.

IN the August number of the *Quarterly Medical Journal* Mr. R. J. Pye-Smith of Sheffield describes what is believed to be a unique case. In July, 1899, he was consulted by a medical man, aged 34 years, who several years previously had spent a short time in India and whilst there had on one occasion been catheterised for retention of urine during an attack of fever. The patient was now suffering from a cyst of the right testicle which he had first noticed six years before, and it had gradually increased in size, more rapidly during the last year. It caused but little inconvenience and no pain or other appreciable symptoms. Mr. Pye-Smith punctured the sac with a trocar and cannula and drew off two and a quarter ounces of a watery, fairly opalescent fluid. This fluid was examined microscopically by Dr. C. Monro Hector who found that it contained, in addition to many spermatozoa (still active but not very vigorous), numerous living acari varying from 0·15 to 0·30 millimetre in length and about 0·10 millimetre broad; he estimated that there were about 800 acari in the total contents of the cyst. On the advice of Mr. A. D. Michael, F.Z.S., the specimens were submitted to Dr. E. Trouessart of Paris who examined them and published an illustrated description of the acarus in the *Archives de Parasitologie*, No. 3, 1902. He recognised it as new to naturalists (this department of the fauna of India has been very little studied) and he has classified it as a sarcoptide of the sub-family tyrogliphinæ, nearly related to histiogaster carpio (Kramer), but a new variety; he therefore proposed to call it "histiogaster spermaticus." The measurements just given show that it is decidedly smaller than the ordinary itch insect which is itself so minute as to be barely visible to the naked eye. The itch insect also has its length and breadth nearly equal, whereas the outline of the new acarus is distinctly elongated. To account for its presence in the cyst Dr. Trouessart suggests that an egg-bearing female was adhering to the catheter which the patient had passed in India, that she attached herself to the urethral mucous membrane, entered one of the ejaculatory ducts, and followed the vas deferens till she reached the epididymis, where she probably commenced to lay her egg,

and the infarct thus produced caused the rupture of the mucous membrane and the formation of the cyst.

THE FOURTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

AN office has been opened at Madrid to secure accommodation for members who propose to attend the Fourteenth International Congress of Medicine which will be held next April. Applications should be made direct to the secretary, Bureau des Logements, Faculté de Médecine, Madrid. Intending visitors to Madrid should not delay too long in making application, as it seems probable that the housing accommodation will be strained to the uttermost during the congress week.

"SPOTTED FEVER" OF THE ROCKY MOUNTAINS.

AN interesting account of this disease is given by Wilson and Chowning in a report to the Montana State Board of Health.[1] The disease occurs in a very limited tract of country in the Bitter Root Mountains and is characterised by rigors, high temperature, and the recurrence of a macular rash, at first rose-coloured and discrete but afterwards purplish and nearly confluent. The rash commences on the second to the fifth day about the wrists, ankles, and back, but afterwards extends all over the body. The disease lasts for two weeks and then begins to subside by lysis, and convalescence commences about the end of the fourth week. The disease only occurs in the spring and has a mortality of from 70 to 80 per cent. No bacterial form could be isolated but there are present in the blood protozoan parasites not unlike the pyrosoma bigeminum of Texas fever. The disease is not contagious, but in all cases examined there were small wounds of the skin said to have been caused by the bites of ticks, which are numerous in the locality and appear in the spring as soon as the snow melts. It is suggested, therefore, that this remarkable disease is due to a protozoan parasite, infection with which is occasioned by the bite of a tick.

AMAUROTIC FAMILY IDIOCY.

AMAUROTIC family idiocy is a rare condition which has been observed in Jewish children. It was first described in 1871 by Mr. Waren Tay; since then about 68 cases have been recorded. In the *New York Medical Journal* of July 12th Dr. A. Hymanson has published the following case. A male infant whose parents were Russian Jews appeared normal until the eighth month, when he ceased to take any interest in his surroundings. He would not raise his head and made purposeless movements of the limbs. The head was large, measuring 19 inches in circumference. The fontanelles were prominent and widely open, but at the age of 10 months they were gradually closing. At the age of 15 months he could not hold his head up; it was usually thrown backwards. He was very anæmic, his muscles daily became weaker and more flabby, and spontaneous movements gradually ceased. He had a vacant look and seemed to see light but did not recognise his parents. He seemed to be deaf but became frightened when anyone knocked at the door. During sleep the eyes and mouth were wide open. The pupils were slightly contracted and did not react to light. The fundi showed changes exactly similar to those described by Mr. Waren Tay. Corresponding to the macula lutea of each eye was a large bluish-white spot about twice the size of the optic disc. At its centre was a brownish-red circular dot. The optic discs were in a state of grey atrophy and the calibre of the vessels was markedly reduced. The child died at the age of 19 months. Two weeks before death there was great anorexia. He was much emaciated, could hardly move his limbs, and had gluteal bed-sores. The temperature was subnormal, 97·5° to 98° F. A necropsy was refused. Of the 68 recorded cases 40 are known to have been fatal: the result in the others is unknown. The family predisposition is shown by the fact that 28 cases occurred in 18 families. 30 cases were observed in America, 11 in England, 14 in Germany, and the remainder in other countries. The necropsies have not shown any abnormality in the form or structure of the cerebral convolutions. Thus the etiology and pathology are unknown. The chief clinical features are idiocy, weakness of all the muscles terminating in paralysis, gradual loss of sight, characteristic changes in the macula lutea, marasmus, and death at the end of the second year.

[1] Journal of the American Medical Association, July 19th, 1902, p. 131.

LEUCOCYTE CHARTS IN PNEUMONIA.

IT has been known for a long time that the leucocytes in the blood are increased in pneumonia, and Dr. J. T. Hewetson of Birmingham, writing in the August number of the *Birmingham Medical Review*, recommends the use of charts or graphic curves showing the daily variations in their number as an important element in the diagnosis and prognosis of the disease. He holds that the information obtained by stained blood-films is of less value in pneumonia than that derived from quantitative estimation of the leucocytes. He gives illustrations of charts containing three curves showing simultaneously for each day the highest pulse-rate and temperature and the degree of leucocytosis; once he adds a fourth line—namely, a respiration curve. The curves are not superposed but are kept quite apart, one above another, with the same vertical lines for all. The leucocytosis scale has 5000 per cubic millimetre as the starting-point and usually ascends by steps of 5000 with an upward limit of 30,000, but in one case the scale ascends by steps of 10,000 to an upper limit of 80,000. In moderately severe and uncomplicated pneumonia there is a rapid diminution in the number of the leucocytes after the crisis, the average proportion per cubic millimetre being once more established. In severe pneumonia the leucocyte numeral is maintained for several days after the crisis and the fall to normal is gradual. As a diagnostic means in the early stage of pneumonia before the appearance of physical signs the presence of leucocytosis would exclude typhoid fever, malaria, and influenza. The leucocytosis of pneumonia is due entirely to an increase of the polynuclear, finely granular oxyphiles; it usually rises steadily day by day, reaching a maximum about the period of the crisis.

WE have received a copy of the Transactions of the British Congress on Tuberculosis held in London in July, 1901. The Transactions make four large volumes, of which Volume II., containing the Transactions in the State Section, edited by Dr. H. T. Bulstrode, and Volume III., containing the Transactions in the Medical Section, edited by Sir Hugh Beevor and Dr. Hector Mackenzie, and in the Pathological Section, edited by Dr. J. J. Perkins, are the largest and most important. The Transactions are of great interest and will receive detailed consideration.

IT has been decided to hold the next meeting of the International Otological Congress at Bordeaux in 1904, instead of in 1903, as originally arranged, on account of the International Medical Congress at Madrid being fixed for next April.

A CHARTER has been granted by His Majesty the King to the British Academy—a body formed for the promotion of historical, philosophical, and philological study. The names of the 49 first Fellows of the British Academy include most

of our best known scholars in the three departments of learning specified. Pure literature is not recognised in the new corporation, while that division of natural philosophy which is usually termed "natural science" will continue to supply the Royal Society with illustrious names.

THE *London Gazette* of August 15th contains the official announcement of the dignity of knighthood being conferred upon the Honourable Henry Normand MacLaurin, LL.D., M.D. Edin., M.A., Chancellor of the University of Sydney and Member of the Legislative Council of the State of New South Wales, and upon Mr. John Logan Campbell, M.D., late Mayor of Auckland, in the Colony of New Zealand.

Mr. Norman Hay Forbes, F.R.C.S. Edin., has been appointed a Knight of Grace of the Order of St. John of Jerusalem in England.

THE Duke of Bedford has promised an annual subscription of £1000 per annum for three years to the Cancer Research Fund.

Dr. W. S. Playfair's many friends will be glad to learn that he is now entirely restored to health.

Looking Back.

FROM

THE LANCET, *SATURDAY, AUGUST 21*, 1824.

PHARMACEUTICAL CHEMISTRY.

Hydrocyanic Acid.

In a former number, we announced to our readers the test which M. DUBLANC, of Paris, had discovered, for detecting the presence of acetate of morphine. The test which this gentleman proposed is the tincture of galls, made with pure alcohol, but we have stated the objections which exist to this substance being used for that purpose, and have shown that iodine is far superior, either to the tincture of galls or ammonia, for detecting the presence of morphine, or any of its preparations. We intend at present to allude to some experiments which have lately been made, by M. LASSAIGNE, with a view of ascertaining the presence of hydrocyanic acid in animals which have been poisoned by this substance. The test which is usually made use of for this purpose is the sulphate of iron, and the manner in which the experiment is conducted is as follows: a little potash is put into the liquid which is supposed to contain some of the acid, and then some persulphate of iron, dissolved in water, is poured into this, when a beautiful blue colour manifests itself if there is any acid present. The intensity of the colour varies according to the respective quantities of water and acid; and if there is but a slight quantity of the latter, some hours frequently elapse from the experiment before the blue colour is to be seen. But M. LASSAIGNE, in his experiments, tried another test, with which it is possible to detect twice as small a quantity of the acid as with the sulphate of iron. M. LASSAIGNE'S method is as follows: some potash is to be put into the liquid supposed to contain the acid, so as to slightly alkalize it; to this a few drops of a solution of sulphate of copper are added, and then sufficient hydrochloric acid to re-dissolve the excess of oxide of copper which has been precipitated by alkali; the liquid instantly assumes a milky appearance, more or less intense according to the hydrocyanic acid which it contains. A solution of nitrate of silver is also a very delicate test for discovering, in distilled water, the existence of the hydrocyanic acid; but as the product which is obtained possesses properties which are common to it and the chlorate of silver with which it may be confounded, the copper is to be preferred. The acid which M. LASSAIGNE employed was the pure hydrocyanic acid, prepared according to GAY LUSSAC'S method, and which was mixed with five times its weight of water, in order to prevent its too speedy decomposition.

From M. LASSAIGNE'S researches it appears,

I. That it is possible to detect in a distilled liquid hydrocyanic acid in the proportion of a $\frac{1}{10000}$ or $\frac{1}{20000}$ of the weight of the water.

II. That in the poisoning of animals by this acid, it is possible at the end of eighteen or forty-eight hours, and even a longer time, to detect, by the processes mentioned above, the presence of this terrible poison.

III. That it is always in the viscera, where this substance has been first injected, that traces of it are to be found.

IV. That in the head, spinal marrow, and heart, not the slightest quantity can be found, whilst in these organs the smell is so strong as to create a suspicion of its presence.

ROWTON HOUSES, LIMITED.

ANOTHER of those splendidly equipped buildings which have earned the name of "poor man's hotels" has just been opened at Fieldgate-street, Whitechapel, London, E. This is the fifth building of its kind and so excellently were the details of construction of the first Rowton House thought out that except as regards size not one of the buildings differs materially from any other.

The present house is, however, larger than any of its predecessors, the first of which was opened at Vauxhall in 1893 with 475 cubicles, the second at King's Cross in 1895 with 677 cubicles, the third at Newington Butts in 1897 with 805 cubicles, the fourth at Hammersmith with 800 cubicles. The fifth, the present building, has 816 cubicles.

A full description of two of the Rowton houses will be found in previous issues of THE LANCET[1] and it is unnecessary to describe the new Rowton House in detail except as regards a few features. In our report on the Rowton House in King's Cross-road we called attention to the danger from infection of having one room only for the sorting of clean and the reception of dirty linen, while one lift carried both kinds of linen. This serious defect in an otherwise perfectly arranged and admirably managed building has now been rectified and at the new Rowton House at Whitechapel not only are there distinct rooms for dirty and clean linen respectively, but separate lifts supply each room. Another matter on which Lord Rowton and his directors are to be congratulated is the provision of an open-air lounge for the use of their tenants. This is a most desirable addition to the building and is on a level with, and easily accessible from, the reading-room. On the opening day this lounge was decorated with flowers and plants of various kinds and it is to be hoped that these will become a permanent feature of this open-air auxiliary to the reading-room and building. The sanitary arrangements show that the greatest care has been exercised in regard to the health of the inmates and the means of escape in case of fire are ample, though there is little risk of a serious fire occurring in one of these houses as they are practically fireproof. From an artistic point of view the reading-room is especially noteworthy, a large portion of the wall-space being occupied by a series of panels emblematic of the Seasons These have been painted and presented to Rowton House by Mr. H. F. Strachey. Altogether the single working man of the poorer class in the East-End of London is to be congratulated upon a "home" where for 6*d*. a night he can obtain a good bed in wholesome surroundings and good food at a very cheap rate, besides being surrounded with comforts which no other place of a similar kind, so far as we know, possesses. But we must not forget that it is to Lord Rowton and his company that we owe this practical contribution to the solution of a difficult problem. The work which they have already done will not be forgotten, but practical and important as that work has been there is yet something still to be done—we mean the erection of a Rowton House for women. We quite appreciate the difficulties of management of such a house, but a decent lodging-house for women on the lines of Rowton Houses for men is a necessity. Those who have so successfully planned and carried out Rowton Houses for men could, we have no doubt, do the same for the other sex; at any rate, we hope that they will try.

[1] Report of THE LANCET Special Sanitary Commission on Private Action in Respect of Common Lodging-houses. THE LANCET, April 29th, 1893, p. 1017, and March 28th, 1896, p. 867.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT MANCHESTER.

THE SECTIONS.

MEDICINE.

FRIDAY, AUGUST 1ST.

THE sitting opened with

Demonstrations of Clinical Apparatus.

Dr. JAMES MACKENZIE (Burnley) demonstrated his Clinical Polygraph and Phlebograph. The sphygmograph, he remarked, in the great majority of cases only took cognisance of the action of the left ventricle during a portion of the cardiac cycle. In order to get evidence of the action of the other chambers of the heart various methods had been devised. The clinical polygraph was intended to register, on the same paper and at the same time as the radial pulse was registered, other movements due to the circulation or respiration. It consisted of an ordinary tambour attached to a sphygmograph in such a manner that the point of the lever of the tambour lay immediately above the lever of the sphygmograph. The tambour was connected by means of an elastic tube to a shallow open cup. This cup, or "receiver," was placed over any pulsating part and the movements were conveyed by the tube to the tambour. A modification of the receiver was employed to register the movements of the lever. Illustrations of its usefulness were given, and a case was cited illustrating how this method of observation recorded the action of the four chambers of the heart in a patient suffering from influenza, with a slow, irregular pulse. The facts noted in this case were that however irregular the action of the heart the ventricles always contracted together and the auricles always contracted together. The ventricular movements were frequently slow and irregular, while the auricular movements were faster and only rarely irregular. It was pointed out that this peculiar discordance in the action of the chambers of the heart corresponded to the action of the heart chambers in digitalis poisoning, and the suggestion was made that the influenza poison affected the heart like digitalis and not by means of the vagus nerve, as was commonly assumed.

Dr. GEORGE HERSCHELL (London) demonstrated the Tallquist Hæmoglobin Scale. The instrument consisted of a lithographed scale of tints. A drop of blood being placed upon a piece of white blotting-paper, it was compared with these and the colour which it matched showed the percentage of hæmoglobin. According to Cabot and Professor Sterling the error was so slight that it might safely be used for clinical purposes. The scales were supplied by Down Brothers, St. Thomas-street, E.C.

Dr. DAVID DRUMMOND (Newcastle) remarked that he was sure that the simplicity of the Tallquist hæmoglobin scale would make it a thoroughly useful test in the hands of the practitioner. He wished to draw attention to the employment of the drop test, depending on the same principles as the hæmoglobin test, in detecting bile in the urine. For a long time he had been in the habit of using it in the wards and its extreme simplicity must commend it. A drop of urine containing bile on white blotting-paper left a stain or disc that was almost characteristic, as the colouring matter was confined to the centre, the periphery being practically colour-free, whereas in the concentrated urine of dark colour the colour was shaded off gradually to the edge of the wet disc.

Dr. HERSCHELL also exhibited an Apparatus for the Inflation of the Stomach with Air for the Detection of Gastric Atony and Dilatation of the Stomach. This procedure, he said, was of great use in the differential diagnosis of gastroptosis and dilatation of the stomach and for the recognition of tumours of the stomach. He pointed out that the method of inflation by means of an effervescing powder, as recommended by Professor T. Clifford Allbutt, was obsolete among physicians who devoted their attention specially to disorders of the stomach. The stomach in different patients varied considerably in size, whereas the amount of gas disengaged from the bicarbonate of sodium was constant, and thus efficient results could not be obtained. The apparatus shown consisted of a parolein atomiser connected to a Turck's double stomach tube. If the small tube was kept open and the air introduced through the other tube sufficient inflation of the stomach was produced without the possibility of over-distending that viscus. Moreover, the visible cloud of atomised parolein enabled them to see that air was escaping and that the apparatus was working properly. In practice the addition of menthol to the parolein conduced to the comfort of the patient during the operation. There were in his (Dr. Herschell's) view, three degrees of gastric atony, or motor insufficiency of the stomach. 1. Loss of *tonicity*, in which the stomach was able to empty itself at the proper time but could not contract on its contents and allowed splashing to be elicited during the digestive period. Most of the cases said to be dilated stomach by those who did not use the modern methods belonged to this class. Many of these cases were latent and showed no symptoms for a considerable time, but sooner or later they passed into the clinical period. 2. Cases where the stomach could not empty itself before the next meal though it did so during the night. These cases, which he called "stagnation myasthenia," were on the borderland of dilatation. 3. True dilatation or retention myasthenia—i.e., cases in which the stomach could not empty itself during the night and contained food residues at all times. A stomach could only, in his opinion, be said to be dilated when it contained food residues before breakfast, and no one had a right to diagnose dilated stomach unless he had examined the stomach before breakfast for food residues. The neglect to do this made most of the literature on the subject fallacious. Cases in which no food residues were present before breakfast might be cases of atony (or more properly myasthenia gastrica with or without stagnation), but they ought not to be diagnosed as gastric dilatation unless there was definite retention of food.

Dr. I. WALKER HALL (Manchester) demonstrated his Purinometer, an instrument employed for the clinical estimation of purin bodies in the urine.

Dr. J. DIXON MANN (Manchester) congratulated Dr. Walker Hall on the applicability of this process. So many of the methods were only available in a laboratory, but this one was so simple that it could be readily employed at the bedside or in the consulting-room.

Dr. F. J. POYNTON (London) and Dr. ALEXANDER PAINE (London) contributed a paper entitled,

Observations upon Certain Forms of Arthritis,

illustrated by lantern slides, drawings, and macroscopic preparations. The observations of the authors were chiefly confined to the rheumatic, rheumatoid, and septic types of arthritis. They commenced with an allusion to the isolation of a diplococcus from the throat of a man suffering from rheumatic angina, and the reproduction of rheumatic manifestations, including polyarthritis by intravenous inoculation of this diplococcus into rabbits. The researches of Fritz-Meyer and Loeffler were commented upon. As a result of a clinical, pathological, and experimental study of rheumatic arthritis the authors had concluded: (1) that the primary seat of deposit of the rheumatic micro-organism was in the synovial tissues; (2) that the endothelium served as a barrier to its escape into the joint cavity; and (3) that there was active phagocytosis both in the synovial tissues and also in the articular exudations when the diplococci did escape the endothelial barrier and reach the cavity of the joint. They thought it highly important to recognise that the escape of the micro-organism into the joint cavities was a vital and not a passive process; and since rheumatic arthritis was such a transitory manifestation it was to be expected that the cultures would be often negative. In severe cases the diplococci were present in the exudation, clinging to the fibrinous strands, and the endothelium was in such cases more or less destroyed. In chronic rheumatic arthritis of long duration there occurred a perivascular fibrosis around the small blood-vessels. The contraction of this fibrous tissue diminished the lumen of these blood-vessels and thus impaired the nutrition of the synovial tissues. They believed that this perivascular fibrosis explained to some extent the intractable nature of these forms of arthritis and their slow reaction to treatment. A very interesting type of arthritis had been especially described by Dr. G. F. Still as occurring in childhood. It was characterised by much periarticular thickening. The lymphatic gland and spleen were enlarged and the pericardium might be adherent. There was doubt as to how such cases should be classified, whether as rheumatic, rheumatoid, or as a special disease. They had investigated one such case under the care of Dr. F. Parkes Weber during life

with negative results, but there was, in spite of that, little doubt of their bacterial origin. The observations of Dr. Poynton and Dr. Paine upon rheumatoid arthritis were limited to four particular points: (1) whether or not there was a specific disease which could be called rheumatoid arthritis; (2) the production of rheumatoid arthritis by intravenous inoculation of a diplococcus; (3) the relation of the nervous to the arthritic phenomena; and (4) the relation of rheumatic fever to rheumatoid arthritis. Amongst all the uncertainty that surrounded the study of rheumatoid arthritis it seemed clear that many different infections might produce a rheumatoid arthritis. Whether there was in addition to these a special disease still required elucidation. It was also undoubted that various micro-organisms injected into the blood-stream might produce a rheumatoid arthritis, as they had demonstrated in January, 1902. Whether the nervous phenomena and the arthritis were the joint result of some peculiar poison acting upon both these tissues, or whether the arthritis was in reality neurotrophic, were questions which had to be approached at present with an unbiased mind, and they thought that the former view would prove to be the correct one. Rheumatoid arthritis following repeated attacks of rheumatic arthritis they thought might be the result of an intensified local virulence of the rheumatic infection and not due to a secondary infection. This seemed probable to them because they had found that both simple and malignant endocarditis might result from inoculation with the diplococcus of rheumatic fever, and rheumatoid arthritis in rheumatic subjects appeared to them as the parallel in the joints to malignant endocarditis in the heart. Upon two occasions they had isolated the pneumococcus from suppurative arthritis complicating pneumonia, which gave additional support to the writings of Leroux and of Dr. Cave, Dr. Nathan Raw, and Dr. G. R. Murray of England. In the study of suppurative arthritis it had seemed best to abandon the use of the term "pus" and "septic," for these words were often used so loosely as to convey but little real information. Examples were given to illustrate that a detailed description of the exudations in arthritis was preferable to the use of these terms "pus" and "septic." Finally, the influence that was exerted upon methods of treatment by the recognition of a bacterial agent in many forms of arthritis was commented upon and exemplified by allusions to Menzer's specific rheumatic serum. The importance of prophylactics for the community and the individual, the necessity for a varied treatment based upon bacteriological inoculations, and the possibilities of surgical interference were also referred to.

Dr. DAVID DRUMMOND read a paper entitled,

Some Practical Remarks on the Diagnosis of Heart Disease.

Brief reference was made to functional murmurs, and the point was insisted upon that a murmur did not necessarily indicate an organic lesion. The following phases of cardiac diagnosis were then discussed—the heart of alcoholism, of syphilis, and of kidney disease, cardiac dilatation, and mitral stenosis. Great stress was laid upon the gravity of the prognosis in the case of a heart poisoned by alcohol, and the features of acute and chronic intoxication were considered. Dr. Drummond urged that alcoholic excesses should be regarded as a common cause of valvular disease, affecting especially the mitral valves and producing thickening and regurgitation. Reasons were advanced for allocating to syphilis a prominent place in the pathology of heart disease, and it was claimed that the syphilitic heart should take its place beside the rheumatic and other well-recognised forms of cardiac mischief, the subject being illustrated by a detailed account of the clinical features of syphilitic aortic regurgitation. In discussing the diagnosis of the renal heart stress was laid upon evidence of hypertrophy of the left ventricle with reduplication of the first sound. This led up to remarks upon cardiac dilatation, the diagnosis of which was discussed, and the following aphorism was advanced: "Given obvious cardiac weakness, as shown by breathlessness, dropsy, weak pulse of low tension, further weakened by exertion sufficient to embarrass, with great cardiac enlargement and systolic bruit either indistinct or absent, there is gross cardiac dilatation." Allusion was made to the diagnostic value of musical murmurs and a further communication on the subject was promised. The paper terminated with a detailed de-cription of the signs of mitral stenosis. It was urged that in view of the fact that the characteristic murmur of mitral stenosis was so often absent the patient should be examined when lying on the left side and it was claimed that this manœuvre often brought into prominence the presystolic murmur.

Dr. F. M. SANDWITH (Cairo) read a paper entitled

The Earliest Known Physician,

and exhibited a photograph of a portrait-fresco from his tomb.[1] In his interesting "Medical History from the Earliest Times[2]" Dr. E. T. Withington had given a frontispiece sketch and a short mention of the tomb of Sokhit-ni-onkh, who was the earliest physician in the world's history so far revealed. Having in this way heard of the venerable colleague who lived some 5500 years ago Dr. Sandwith thought it would interest many in the medical profession of the present day if he could re-discover his tomb, especially as he soon found that modern translators of the hieroglyphic text differed somewhat from the authorities quoted by Dr. Withington. The tomb itself, the ruin of which still existed, was situated at Sakkarah, the necropolis (now mostly in ruins) of the mighty city of Memphis which flourished about B.C. 4000 and later, a few miles south of the present position of Cairo. Dr. Sandwith then described the tomb as "an oblong mastaba, 60 feet by 28 feet, quite plain, excepting for a well dug through the masonry. The sarcophagus chamber is roughly hewn out of the limestone rock which forms the plateau of Sakkarah. The name Sokhit-ni-onkh signifies 'the man who is possessed of life,' and it must be remembered that the ancient Egyptians thought life and death were individual beings who could, if necessary, be eaten and swallowed. They also believed that every sick man was possessed by the spirit of a dead man or woman. Who so likely, therefore, as the priest to be able to drive out the usurping spirit, which must be done before it was worth while to make any attempt at healing the sufferer's body which had been damaged by the occupation of the intruding spirit? In those days there were no physicians outside the priesthood, though bone-setters probably practised from the earliest times. Sokhit-ni-onkh was certainly a physician as well as a priest, because all the other titles after his name are only honorary ones given to every chieftain of high rank about the Court. His title as physician is *senun*, which signifies wisdom or knowledge. After the ordinary formulæ experts can read on the posts of the *Ka* or soul door the following sentences. On the right, Pharaoh Sahura of the Fifth Dynasty is indicated as saying, 'His Majesty says to the chief physician Sokhit-ni-onkh, Strength to thy nose, thou whose steps towards the West are beloved by the Gods and honourable old age as for a trusty and well-beloved servant.' The first words are an ordinary salutation to the living or the dead and are equivalent to wishing a cool breeze from the north, or air to breathe, from the Mediterranean. The trusty servant refers to one who devoted himself during life to the king and after death to a god. The physician then writes: 'I worship the great King and I pray every god for Sahura, for he knows me and mine. Thus every wish from the mouth of His Majesty is realised for me, for the god (Anubis) has granted him to excel in medical affairs, because of the great veneration that he has for him more than for every other god. Oh! you who love Ra, pray to every god for Sahura, who confers these benefits on me, for I am his trusty servant. I never do any one any harm.' In these last lines the physician requests all those who in the future will read his tombstone to add in their prayers the name of the son of Ra. On the left door-post the physician tells us what the King has done for him. The chief physician Sokhit-ni-onkh says of His Majesty: 'It is thy double, oh friend of Ra, who hast divinely decreed to give me a stone door for this tomb in the cemetery.' 'His Majesty [he further relates] ordered that two stone stelæ for doors should be brought from Tourah and that they should be erected in the interior of two niches of the Khaourri Sahura building [vision of the crown of Sahura]. The chief taskmaster of two gangs of artisans [carpenters and sculptors] from the sacred workshops provided skilled labourers to execute the work. His Majesty was every day at the workyard seeing that religious decoration was carried out the whole day long. His Majesty made them execute blue sculptured hieroglyphics of lapis lazuli.' It is clear from this that this Pharaoh profited by an expedition sent to the quarries of Tourah on the other side of the Nile to procure an extra stela which he gave to his physician, and allowed

[1] A copy of the photograph is obtainable at cost price from the Autotype Company, New Oxford-street.

[2] London: Scientific Press, 1894.

this to be erected while he was himself superintending the funeral chapel attached to his own future tomb. There are other cases of a similar honour having been conferred by a Pharaoh on one of his favourites, but I have not been able to hear of any other instance of the recipient being a physician. According to Petrie[3] the Fifth Dynasty started by tradition from a high priest of Heliopolis near Cairo, and claimed divine descent from Ra. In earlier dynasties kings are always Horus kings or belonging to Horus and Set united, but in the Fifth Dynasty the king was first called 'Son of Ra.' Sahura reigned for 13 years (3893–3680 B.C.) and his pyramid is believed to be the north one at Abusir—a few miles to the south of the great pyramids of Ghizeh. The most important event of his reign was his campaign in Sinai against the native tribes, where he carved a rock tablet to commemorate his victory over the Menthu. The Fifth Dynasty is known to all travellers in Egypt by the Tomb of Tih and the Pyramid of Unas, both at Sakkarah. The period was marked by its priestly character, for religious foundations and fine tombs were considered more important than foreign wars or building great monuments, and the earliest dated papyri come from this dynasty." Dr. Sandwith concluded by remarking that he did not pretend himself to any profound knowledge of Egyptology, but he had had the good fortune of sitting at the feet of M. Maspero, who kindly allowed the photograph of the tomb to be taken. He was also greatly indebted to Mr. Quibell, who had supplied him with two photographs and other willing help On the stela, Dr. Sandwith explained, the physician stood with a sceptre in one hand and a wand in the other, sometimes alone, sometimes with his wife standing behind him. His name was always written plainly above his head, but the wife's name had in every case been carefully erased, which Dr. Sandwith feared must mean that their revered predecessor was more fortunate at Court than in his home life.

Dr. HARRY CAMPBELL (London) read a paper on

Overlooked Forms of Graves's Disease.

It was pointed out that Graves's disease was apt to pass unrecognised in its earlier phases and that it might remain in an immature stage for months or years, gradually subsiding or taking on further development in consequence of some acute illness, fright, the climacteric, or other stress. When exophthalmos and pronounced thyroid enlargement were absent the disease was frequently overlooked. Extreme nervousness, hand tremor, and tachycardia, especially if occurring in a young woman, should always lead to a search being made for other symptoms of the malady. If these symptoms were lasting and not merely due to temporary excitement the diagnosis was almost certain, while it might be regarded as placed beyond doubt if emaciation, pigmentation of the skin, and profuse perspiration were likewise present. The most striking clinical feature of the disease was intense nervous agitation. The symptoms of Graves's disease were due to the presence in the blood, owing to the occurrence of certain morbid changes in the thyroid gland, of an excess of normal thyroid secretion, or of perverted secretion, the effect of which was to cause the vital fire to flare up, as it were, exciting the tissues to a rabid katabolism and increasing the output of carbonic acid, urea, and other excreta. Such being the case, the question arose whether cases allied to Graves's disease might not occur owing, not to an actual morbid condition of the thyroid gland, but to a mere physiological hyper-activity of it. That the activity of this gland varied in different individuals there could be no doubt. Those with a congenitally sluggish thyroid were by nature phlegmatic, while those more actively disposed owed the circumstance to the possession of a more active thyroid. In like manner the same individual might differ at different times in respect of thyroidal activity, and it might be believed that the gland might sometimes become so active as to induce a condition of thyroidism. Several of the symptoms of the climacteric in woman might, as Dr. H. Willoughby Gardner had suggested, be explained in this way, and many other cases suggested a similar explanation. It was necessary to remember, however, that such cases were not instances of true Graves's disease, in which the thyroid gland was not merely hyper-active but was the seat of a profound organic change.

[3] History of Egypt, p. 69. London, 1899

Dr. D. J. CHOWRY-MUTHU (Wells) read a paper entitled

Some Observations on the Results of the Treatment of 100 Cases of Pulmonary Tuberculosis treated by the Open-air Method.

There was a tendency in the present day, he said, to exaggerate the significance of the tubercle bacillus, but in his belief the "soil" was the more important factor—namely, the causes which tended to weaken the resisting powers of the body—heredity, alcoholic habits, poverty, unhealthy environment (such as overcrowding and defective ventilation), influenza, pleurisy, pneumonia, overwork, worry, anxiety, and undue fatigue. Physical and mental strain tended to exhaust the nervous energy and to lower the vitality as much as anything. He had met with three cases in which wives had nursed their tuberculous husbands all through their fatal illnesses but had escaped. No amount of exposure to infection would produce tuberculosis as long as the vital powers remained strong. In 55 per cent. of his cases fever disappeared within six weeks. The usual method of taking the temperature was quite satisfactory. He had found the rectal method neither trustworthy nor necessary. After discussing the other symptoms and the physical signs the *rationale* of the open-air treatment was discussed. As regarded the results achieved, out of 100 patients in all stages of the disease who had come under treatment in 28 the disease was actively arrested, 40 were greatly benefited, and 11 were slightly benefited. The conclusions which Dr. Chowry-Muthu arrived at were: (1) that the science of open-air treatment was not yet perfect; (2) that it was beneficial in the treatment of other diseases besides tuberculosis; and (3) that it was an important means of educating the people in healthy living.

Dr. A. MANTLE (Halifax) read a paper on the Vaso-motor Disturbances of the Stomach and Bowel.

STATE MEDICINE.

FRIDAY, AUGUST 1ST.

Mr. C. H. TATTERSALL (Salford) read a paper on

The Recent Outbreak of Arsenical Poisoning,

which had been traced to the use of contaminated sugar in the manufacture of beer. He stated that it was the custom of many English brewers to introduce artificial sugar into the mash-tin in order to impart the necessary brightness to the beer. The quantity employed varied from 6 per cent. in the case of the best kinds of beer to some 25 per cent. in the cheaper qualities. The sugar they used was either invertin, prepared by treating cane-sugar with sulphuric acid, or glucose, prepared by acting upon starch by sulphuric acid. Many firms required a guarantee that the acid which they purchased for this purpose was free from arsenic, but from March, 1900, to November of the same year the acid supplied to one large factory had been manufactured from arsenical pyrites. The beer in the preparation of which this contaminated acid had been used was first put on the market in June, 1900; the discriminating portion of the general public soon noted the ill-effects following its consumption, and as a result drank less beer, and it was the marked falling-off in the returns that first attracted the attention of the brewers and also of the Customs department and led to the suspicion that something was wrong. About the same time the marked increase in the number of cases of what appeared to be alcoholism and alcoholic peripheral neuritis led Dr. E. S. Reynolds, the visiting physician to the Crumpsall workhouse hospital, to investigate the matter thoroughly, and as the result of his investigations to describe them as cases of arsenical poisoning. Analyses of the beer supplies followed, and as the result of the analyses various amounts of arsenic were detected in many samples of beer, and Mr. Tattersall personally was of opinion that the recorded quantitative determinations all erred on the side of being too small; the largest amount found was 1·5 grains per gallon. The marked influence which this outbreak of arsenical poisoning had exercised on the birth-rate was also a point of great interest. Allowing for the time that the contaminated beer was in circulation and the period of gestation the birth rate of Salford showed a decrease over the corresponding year of 4·2 per 1000, equivalent to 842 births. He deplored the fact that in spite of the number of deaths and the still greater number of individuals more or less severely injured, the result of the consumption of the contaminated beer, there was no system of notification which

would have enabled the local public health authority to take steps to deal adequately with the outbreak, and he would suggest that some public department—for example, the Local Government Department—should be empowered to exercise a control over food-stuffs generally and to seize and to summarily deal with such when that course appeared necessary in the interests of the public health.

In the absence of Professor SHERIDAN DELÉPINE (Manchester) photographic reproductions of his standards for the quantitative estimation of the arsenic in beer were exhibited.

Professor J. DIXON MANN (Manchester) then briefly recounted the various methods employed in the detection of arsenic in beer and its quantitative estimation and explained the process which he himself employed. He quite agreed with Mr. Tattersall that greater powers should be given to the public health authorities to deal with obviously injurious food-stuffs, especially in such cases as were not provided for by the Sale of Food and Drugs Act.

Dr. A. P. LUFF (London), in the course of a few remarks, paid a highly appreciative tribute to the valuable and accurate work done by the Manchester scientists in the elucidation of the causes, &c., of the recent outbreak, especially by such workers as Sheridan Delépine, Dixon Mann, and Reynolds.

Dr. E. S. REYNOLDS (Manchester) stated that cases of arsenical poisoning under the form of peripheral neuritis existed 20 years ago and were probably due to the arsenic now shown to be present in malt and that the recent outbreak due to excessively contaminated glucose should only be regarded as an incident—an incident, however, which provided the key to the situation. Dr. Reynolds also showed a remarkably fine series of lantern slides portraying the various chemical appearances observed during the outbreak.

Dr. REGINALD A. FARRAR (London), in a communication on

Plague as a Soil Infection,

stated his thesis as follows: "Outbreaks of bubonic plague are dependent on the infection of soil with a specific microbe conveyed in the excreta of rats or other animals that have suffered from the disease. Except in pneumonic cases, infection is generally the result of a direct inoculation from the soil. Personal communication is a factor of relatively small importance in the spread of bubonic plague."

After a few remarks from the PRESIDENT, to which Dr. FARRAR replied,

Dr. J. MILSON RHODES (Didsbury) communicated a paper on

Infant Mortality,

in which he referred to the Registrar-General's report for the year 1900 (the last issued), which stated that of 927,062 children born no less than 142,012 were dead before they had reached one year of age. Sanitation had doubtless made enormous progress during the last half century, with the result that the general death-rate had decreased from 22·0 to 18·2 per 1000, but that reduction did not apply to infants in the slightest degree. The mortality to-day was as high as it was 50 years ago—viz., 154—and in the year which he had quoted (1900) it was the highest on record—viz., 163. The variations in the death-rates of various counties were very great. It was evident that the mortality was not due to climate, for counties in the same division showed very great variations—e.g., the mortality of infants in Nottinghamshire was twice as great as that of Rutlandshire. Another fact that an inspection of the Registrar-General's return brought out very strongly was that illiteracy amongst women and a high rate of infant mortality were very commonly found together, and he quoted statistics to show that in only one of 12 counties where the mortality was the lowest did the number of illiterates exceed 30 per 1000. In the case of the 12 highest in only three cases was it under, and in four cases it exceeded, 40 per 1000. Another fact that the table disclosed was that the counties with the highest mortality were those where the people were employed in mining or manufacturing. The census returns showed that Nottinghamshire, Staffordshire, Warwickshire, and Lancashire, four counties having the highest infant death-rate, were all counties where a very large number of women of the child-bearing age were employed in weaving, pottery, &c., and therefore employed in the great majority of cases away from their homes during the day, handing the so-called care of their little ones over to day baby-farmers. Bad as Lancashire was as a whole, Manchester was still worse, for the mortality in that city amounted to 198 per 1000. Cheetham, where the lowest rate of mortality was found associated with the lowest rate of illegitimacy, was a district largely occupied by Jews, and the fact that most Jewish women suckled their children no doubt played an important part in the reduction of the mortality. On turning to the statistics of illegitimate children, the mortality was two or three times as great as in the case of the legitimate. Taking the whole County Palatine, out of 268 infants of this class 91 died—that is, 33 per cent. Dr. J. Niven's report gave the proportion of deaths of illegitimate infants in the whole of Manchester as 46 per cent.; in Ancoats the mortality rose as high as 60, and in Crumpsall 66 per cent. The principal causes of the high infant mortality were diarrhœa (38 per cent.) and bronchitis and broncho-pneumonia (17 per cent.). England was behind other countries in infant life protection. The so-called Infant Life Protection Act, 1897, provided that "all persons undertaking the care of *more than one infant* under the age of five in hire apart from their parents, or a single infant adopted for a lump sum not exceeding £20, shall notify the authorities." Miss Zanetti, the inspector to the local authority in Manchester, found that some of the worst houses got rid of one child so as to be out of the reach of the Act, and the clause that inspection should only take place where a child was adopted for a sum *less* than £20 was absurd. The International Congress for the Protection of Children, the Poor-law Unions' Association, and the Central Poor-law Conferences, had all carried resolutions by at least two to one desiring the extension of the Act to all single child cases. The Act was at present worse than nothing, for it made the public believe that security for these little ones existed where there was none. Such extension of the Act would, he felt sure, result in a reduction of the infant mortality, as it had done in France, and properly educated inspectors would be able to reach those having the care of the infants. Inspection and education should travel together, and for this work he had no hesitation in saying that ladies were thoroughly competent. Who the administrative authority should be was another question. Personally he thought it a great mistake to make the guardians the responsible authority. It would be more convenient for the district councils to be the registering, and the county councils the inspecting, authorities. Dr. Rhodes then moved the following:—

That the provisions of the Infant Life Protection Act should be extended to all single cases.

This having been seconded was put to the meeting and carried.

Dr. MEREDITH YOUNG (Stockport) read a paper on

Further Control of Common Lodging-houses.

In urging the necessity for further control of common lodging-houses he stated that the existing law was insufficient for the proper regulation of common lodging-houses and their keepers. Once a registered common lodging-house always a registered common lodging-house, was a maxim which held good unless there were three convictions obtained against the keeper. Any person might claim registration as the keeper if he produced his certificate of character signed by three small ratepayers, and unless the keeper were convicted three times of offences against the Public Health Act (Common Lodging-house Provisions). He might be convicted of any other offences and might be utterly unsuitable for his office without running the risk of losing it. Apart from the obtaining of three convictions under the Public Health Act, 1875, the local authority had no power under the general law to withhold the registration of any house as a common lodging-house, provided that it had been inspected and approved by their officers, and provided that the keeper submitted his certificate of character in proper form. It was only rarely that proceedings could be taken under the Housing of the Working Classes Acts, for a house might be quite unfit for use as a common lodging-house long before it became unfit for human habitation. Again, there was no provision in the Public Health Acts for the licensing and registration of premises as common lodging-houses for a short period of time. This was frequently necessary owing to a temporary influx of workers when some such work as railway construction, &c., was in hand. Another important point was that nothing appeared in the Public Health Acts or in the model by-laws

of the Local Government Board enabling local authorities to require means of escape in case of fire to be provided in common lodging-houses. The Local Government Board memorandum on the requirements of common lodging-houses entirely omitted this. Several cases had occurred recently where the absence of fire-escape provision resulted in loss of life. In some of the larger common lodging-houses used by males the want of urinal accommodation was often the cause of indecency and nuisance. This, again, was a matter unprovided for by legislation or in the Local Government Board memorandum, and surely in many cases the general decency and orderliness of common lodging-houses was a matter requiring stringent measures for its improvement. All these improvements might be readily enforced by a simple legal enactment to the effect that all common lodging-houses should be subject to an annual revision of their licences in the same way as slaughter-houses under the Public Health Acts Amendment Act of 1890, licensed victuallers' premises, music-halls, theatres, game-dealers, and the like. The experience in Stockport had been that the strict enforcement or special measures for securing better sanitation, better decency, and orderliness, and greater security against loss of life and property, had been an easy matter when once the lever of annual registration was placed in the hands of the sanitary committee, while it was obvious that no hardship was entailed upon the good and well-kept houses by such a measure.

Dr. F. J. H. COUTTS (Blackpool) stated that the Blackpool council already possessed such powers as were suggested by Dr. Young—viz., annual registration by the council, with the option when the licence was refused of appeal to the magistrates, and it was found that with the necessity for annual renewal of their licences before them common lodging-house keepers were quite amenable to the suggestions of the local inspectors and willing to make such reasonable alterations and improvements as might be considered necessary.

The proceedings then terminated with a hearty vote of thanks to the President and secretaries of the section.

PSYCHOLOGICAL MEDICINE.

FRIDAY, AUGUST 1ST.

Dr. F. W. MOTT (London) opened a discussion on

Syphilis as a Cause of Insanity.

The poison of syphilis, he said, was remarkable for its persistency, its potency, and its prevalence. Owing to social conditions they could not regard syphilis as preventable, but the time had come when serious efforts should be made to diminish its prevalence. Syphilis acted in many ways as a cause of insanity. During the secondary stage the anæmia and toxæmia which it produced acted as exciting causes of insanity in predisposed subjects, but over-dosage with mercury was also a possible factor in some cases. Syphilitic brain disease consisted of inflammation of the supporting tissues of the brain and appeared in the form of basal meningitis, gummata, arteritis, and periarteritis. The worst forms of brain syphilis were those which occurred within the first four years after infection. Such cases usually ran a rapid course and were intractable to treatment. Those forms of the disease in which there was a combination of endarteritis with gummatous meningitis simulated very closely general paralysis. The symptoms very often began with transitory aphasia, word-blindness, and word-deafness, the paralyses which followed were coarse, and ocular paralysis was very common. Severe nocturnal headache occurred and attacks of exaltation and depression together with epileptiform fits were present, simulating general paralysis. The disease was amenable to treatment by drugs and the symptoms in great measure coincided with the post-mortem findings. The relation of general paralysis to syphilis was now an established fact of great importance. The action of syphilis in producing general paralysis was limited to the brain of the civilised man, for in savage races syphilis might be, and often was, common, while general paralysis was rare. The factors which in civilised life favoured the development of neurasthenia were capable, in coöperation with syphilis, of producing general paralysis. Acquired or congenital syphilis was equally potent to cause general paralysis. General paralysis was pathologically a process of degeneration of the nervous system allied to tabes dorsalis, a disease which was itself an outcome of syphilis. The Argyll-Robertson pupil was one of the most characteristic signs observed in both affections. The occurrence of syphilitic infections could by careful investigation be traced in from 70 to 80 per cent. of cases of general paralysis. The symptoms of general paralysis, however, began to be apparent only several years after infection, the average interval being 15 years. General paralysis was unknown where syphilis was unknown and was rare in the rural districts of Ireland and Sweden. It was also rare among priests, Quakers, and women of the upper classes. General paralytics were immune to syphilitic inoculation. A number of statistical data were cited by Dr. Mott from different observers and it was shown that the most recent observations concurred in assigning the first place among the etiological factors to syphilis. Juvenile general paralysis was almost invariably found to be a result of congenital syphilis and in 20 per cent. of the cases observed it was found that the fathers of the patients had had general paralysis. Dr. Mott concluded by adopting, for the purposes of raising a discussion, the thesis, "No syphilis, no general paralysis."

Dr. JUDSON S. BURY (Manchester) said that congenital syphilis produced in infants a typical form of dementia described by him 20 years ago. He believed that general paralysis was largely, but not exclusively, due to syphilis.

Dr. J. WIGLESWORTH (Rainhill Asylum) said that gross cerebral lesions due to syphilis, such as gummata and basal meningitis, were not in his experience such common causes of mental disease as might be expected. The records of necropsies at Rainhill Asylum gave somewhat less than 1 per cent. of such cases. In the present state of their knowledge it would be going too far to take up the position of "No syphilis, no general paralysis." Many cases of juvenile general paralysis showed definite stigmata of congenital syphilis but many also showed no such stigmata, and he was inclined to regard some of these cases as having their origin in a vice of nutrition of the germ-plasma caused by the action of the syphilitic poison. A similar vice of nutrition might give rise to idiocy in the offspring of syphilitic parents.

Dr. G. E. SHUTTLEWORTH (Richmond) stated that in his experience there was a very small proportion of idiots presenting actual stigmata of congenital syphilis, not much exceeding 2 per cent. But considering the difficulty of obtaining correct family histories in such cases he was inclined to think that inherited syphilis played a larger part in the production of idiocy. He had described in 1888 three or four cases of "syphilitic idiocy" which subsequently were placed under the name of "juvenile general paralysis."

Dr. FLETCHER BEACH (Kingston) said that his experience coincided with that of Dr. Shuttleworth as to the influence which syphilis played in the production of idiocy.

Dr. OSCAR WOODS (Cork) said that syphilis was very uncommon in the agricultural districts of Ireland, and patients drawn from the same areas and admitted to the asylum under his care during the past 25 years very seldom had general paralysis. When general paralysis was present, however, a history of antecedent syphilis could be traced very frequently. Even in large towns in Ireland, such as Dublin and Belfast, general paralysis was uncommon.

Dr. ROBERT JONES (Claybury Asylum) agreed that syphilis was an important factor in general paralysis but could not accept the dictum, "No syphilis, no general paralysis." He looked upon overstrain rather than work as a factor in the production of the disease and pointed out that in persons whose nervous tissues had been devitalised by the syphilitic poison the physiological crises of life favoured the development of mental breakdown. The potency of the virus being so universally recognised the time had come, thought Dr. Jones, when it would assist in the prevention of insanity and other diseases if some action could be taken by the legislature or by other means to prevent or to restrict the transmission of syphilis.

Dr. W. LLOYD ANDRIEZEN (London) said that the offspring of syphilitic parents tended to develop various cerebral disorders and defects—idiocy, imbecility, epilepsy, congenital weak-mindedness, and juvenile general paralysis—which were attributable to malnutrition of the germ or sperm-cells or the embryo. Syphilitic encephalopathy was the result of recent syphilitic infection and was marked by vascular changes (endo- and peri-arteritis), and diffuse gummatous and neoplastic proliferations in the cerebral meninges from the direct action of the virus. He could not positively assert whether the degenerative changes in the cortical nerve-cells and cranial nerves at this stage were primary or

secondary to the above-mentioned changes. Small thromboses occurred in the affected vessels, especially in those supplying the basal ganglia. Hence resulted the stasis and inequality of the pupils, ptosis, optic neuritis, trigeminal neuralgias, intense headache, and cephalic paræsthesiæ. Attacks of vertigo and transitory loss of speech and paralysis occurred. Such lesions and symptoms were syphilitic and many of them responded well to treatment with mercury and the iodides. In patients with a predisposition to insanity, acute mental confusion, hallucinatory excitement, stupor, or agitated melancholia resulted. Cases of the above description were absent in asylums but were met with in practice. The symptoms developed at periods varying from two or three months to three or four years after infection. Some of these cases were complicated with alcoholic or drug habits. He preferred the title "syphilitic encephalopathy" to the term "pseudo-paresis" for such cases. That antecedent syphilis could be traced in from 70 to 80 per cent. of cases of general paralysis was true, but the etiology was a highly complex one, as alcoholic or sexual excess could be traced in many cases, the patients being persons of strong physique, of ardent temperament, and of powerful animal and sexual appetites. Tendencies to chronic renal disease and arterio-sclerosis were also present, and in the parentage there were frequent histories of cerebral hæmorrhage, thrombosis, and gross brain disease. The form of heredity was a "congestive" or neuro-vascular one and vesanic heredity occupied a place of secondary importance. In one-fifth of the cases of general paralysis there was no syphilis. He had seen one case of malarial origin of general paralysis and on the whole was inclined to believe in a neurotic predisposition to general paralysis, probably inherited, and to regard syphilis as the main exciting cause, and alcohol, sexual excess, and overstrain as minor exciting causes capable of producing general paralysis without the assistance of syphilis.

Mr. C. S. MORRISON (Hereford) described cases of lead encephalopathy with all the classical symptoms of general paralysis.

Dr. E. S. REYNOLDS (Manchester) opposed the thesis, "No syphilis, no general paralysis," as unscientific and not in accordance with facts.

Dr. MAURICE CRAIG (London) supported the view that syphilis was the most important cause of general paralysis.

Dr. L. ALEXANDER (Hanwell) said that 88 per cent. of cases of general paralysis admitted into Hanwell Asylum were syphilitic.

Dr. MOTT then briefly replied.

Before the close of the meeting of this section a motion was unanimously passed to the following effect:—

That the Section of Psychological Medicine thinks it ought to point out that general paralysis, a very grave and frequent form of brain disease, is largely due to syphilis and is therefore preventable. We therefore, the members, strongly recommend that greater efforts should be made to arrest the transmission of syphilis and to stamp it out, and we further urge that the attention of the legislature and of public bodies should be called to this important matter.

PHYSIOLOGY AND ANATOMY.

THURSDAY, JULY 31ST.

Dr. J. S. EDKINS (London) opened a discussion on

Intestinal Secretion and the Action of Drugs thereon.

He suggested two main points for discussion: (1) the evidence of secretion of the so-called succus entericus; and (2) the functions of the normal intestinal epithelium. With regard to the succus entericus, the more critically the evidence of its existence was examined the more doubtful did it become; thus, considering the histological evidence, the epithelium of Lieberkühn's glands or follicles was continuous with, and similar in structure to, that of the villi, and was different from that of the other digestive glands, the so-called Paneth cells with granules being only cells with mucigen granules. Again, considering the experimental evidence—viz., that of the Thiry Vella fistula and the effect of nerve stimulation—the results obtained by different observers were widely divergent, and the effect of cutting and stimulating the nerves was very difficult to separate from these of interference with blood-supply, which was very liable to occur during the operation. Again, the chemical nature of the fluid obtained, which had a marked but variable alkalinity, and contained albumins, globulins, albumoses, and urea, suggested that it was of catarrhal origin, and Pregel in some experiments on a loop of lamb's gut admitted the existence of catarrh at the ends of the loop. Dr. Edkins was of opinion that all the so-called secretion or succus entericus was of catarrhal origin, the mucous membrane more or less denuded of its epithelium allowing the escape of lymph. It was certain that the fluid always contained solid masses which on microscopical examination were found to consist of epithelium and masses of leucocytes. Tubby and Manning in their case found the gut wall to present all the signs of chronic inflammation and Dr. Edkins regarded the succus entericus obtained in experiments as the product of a chronic or "gleety" catarrh of the mucous membrane. Considering the second question, that of the functions of the intestinal epithelium, it was certain that the epithelium could pass materials from the gut lumen into the blood-vessels and effect changes in them in their passage, and recent work tended to show that the epithelium might produce some secretion which passed into the blood and stimulated the secretion of pancreatic juice, but the only evidence of the epithelium forming a substance to pass into the lumen was the existence of enterokinase, which was able to act on the inert pancreatic secretion and thus to develop its proteolytic properties, and it seemed possible that after all the conversion might be entirely due to leucocytes and not to the epithelium. With regard to the action of drugs on the secretion of the succus entericus Edkins and Horder had studied the action of magnesium sulphate solution on an isolated loop, and taking a 10 per cent. solution had found an increase in the quantity of succus entericus amounting to as much as 70 per cent. and a very considerable increase in the suspended matter (large masses of leucocytes), and on subsequent histological examination of the gut denudation of the tips of the villi; they therefore explained the action of cathartics as due to the action on the epithelium, which was very sensitive to many reagents, allowing the lymph to flow freely outwards. A further purgative effect was due to the peristalsis excited by absorption.

Professor G. N. STEWART said that he agreed that the direct evidence of secretion was very scanty, but inquired as to the validity of the "tapeworm" argument—that intestinal parasites could live in an isolated loop. Since they were very sensitive to change in their medium it had been supposed that no very marked alteration of the normal conditions could exist in such a loop.

Professor W. STIRLING (Manchester) drew attention to the histological differences between the Lieberkühn's follicles of the small and large intestine and especially to the greater number of goblet cells in the latter. He further cited the view of some French observers that the Peyer's patches being large collections of leucocytes might be of importance in liberating the enterokinase.

Dr. W. E. DIXON said that he had found on injecting purgatives into a loop as in Morot's experiments that if an irritant purgative were used there were signs of marked inflammation, whilst if purgative salts were used there was no inflammation but a marked increase of fluid, but far more than could be accounted for by osmosis.

Professor W. H. THOMPSON (Belfast) suggested that it was possible that some condition for secretion had been hitherto overlooked and cited Pawlow's experiments on pancreatic secretion as an example of this.

Dr. EDKINS, in reply, stated that his position was a purely negative one and that he did not deny the existence of a normal intestinal secretion but affirmed that at present there was no evidence of it.

Dr. LOUIS QUERTON read a paper on

Phenomènes Electriques qui accompagnent l'Oxydation de de l'Acide Oxalique produite par la Lumière,

showing that the action of light on solutions of oxalic acid was accompanied by the evolution of an electric current which could be demonstrated by a galvanometer and that this action could be augmented or delayed by certain other chemical reagents.

Professor STEWART read a paper on

The Action of certain Hæmolytic Agents on Nucleated Blood Corpuscles,

in which he stated that mammalian red blood corpuscles presented certain properties which at first sight appeared to be vital phenomena and yet were certainly of physical origin—e.g., selective absorption. Thus, ammonium chloride was taken up by the corpuscles, while sodium chloride was not, and this happened in formaldehyde-hardened corpuscles as well as in living ones. In this research he showed that

similar phenomena were found in the nucleated corpuscles of amphibia, birds, fœtal mammals, and the corpuscles of bone marrow. Of especial interest were the observations on the corpuscles of Necturus, a tailed amphibian with very large corpuscles. Many laking agents were investigated, especially santonin, bile-salts, ether, and amyl alcohol. It had been suggested that many such reagents acted by rendering the corpuscles more permeable and thus practically placing the corpuscles in the same osmotic relations as if they were in distilled water—that was, acting by a process of water-laking. Professor Stewart believed this to occur in some cases, but in others—e.g., sodium taurocholate—there was no entrance of water and yet hæmolysis occurred.

Dr. F. W. EDRIDGE-GREEN (London) read a paper on

The Origin of a Visual Impulse.

His view of the origin of visual impulses was that light falling upon the retina liberated visual purple from the rods and this being acted on by light stimulated chemically the cones and an impulse was transmitted along the visual path to the brain and received by a light perceptive centre which did not appreciate colour but simply light and shade. Colour perception was due to a special centre separate from the visual centre but closely connected with it, a colour being simply a point of difference capable of being perceived by this centre.

Dr. W. RAMSDEN (Oxford) described

Some New Properties of Urea (with Demonstrations).

Solutions of urea had a very marked action on proteids; thus a solution of proteid to which urea was added did not coagulate on heating. The coagula formed when solutions of native proteids were heated dissolved on the addition of urea solution; gelatin was very readily dissolved by it. A dead frog placed in saturated urea solution soon became translucent and shortly fell to pieces. Connective tissue was readily dissolved and this property would probably be useful for histological purposes. The myelin sheath of nerve was rapidly altered and presented similar appearances to those of degeneration. Urea converted native egg-white into a jelly. Dr. Ramsden at first supposed that urea in these reactions was active as a base but further experiments negatived this view—for example, urea was equally active on proteid in acid solution. Dr. Ramsden considered that it might act by rendering the proteid more sensitive to the action of any acid or alkali present. He had prepared crystalline compounds of urea with proteids and palmitic acid.

FRIDAY, AUGUST 1ST.

Professor C. S. SHERRINGTON (Liverpool) and Dr. A. S. F. GRÜNBAUM (Liverpool) opened a discussion on

The Motor Cortex as Exemplified in the Anthropoid Apes,

in which they brought forward the result of their investigations on 13 chimpanzees, two orangs, and one gorilla. They first described the technique of their experiments. Stimulation was effected by Sherrington's unipolar method, a large flat electrode being placed on the foot of the same side, and a fine platinum wire with a small knob used for stimulation of the cortex, the arachnoid being opened and the fluid allowed to escape. The strength of current required was about the same as that for the cat and for the rhesus monkey. The convolutions in the anthropoid approach the human type, but there was great liability to individual variation and frequent asymmetry, which prevented them from being of great use as physiological landmarks. Of greater utility were the genua of the Rolandic fissure, the lower genu marking the situation of neck and arm centres, the upper the body-trunk or cruro-abdominal areas. On the mesial aspect the leg area extended for some distance, thus from below upwards the order was face, neck, arm, body, and leg. A most important point brought to light in these researches was that the excitable motor region, though extending deeply into the Rolandic or central sulcus, did not extend on to the free surface of the post-central convolution, and this was in opposition to the results of previous observers. The movements obtained from the different areas were broadly as follows: in the face area eye, eyelid, nose, jaw, vocal cords, mastication, and also movements of the mouth and tongue; in the arm area shoulder, elbow, wrist, fingers, and thumb; in the leg area toes, ankle, knee, hip, in each case from above downwards. Movements of the anus were obtained by stimulation just at the border between the external and mesial surfaces of the hemisphere. A further difference from the results of other observers on the anthropoids was the ease with which epileptiform convulsions were obtained from the cortex. They had further studied the results of ablation of parts of the cortex and found that marked paralysis occurred from even a small lesion but that this was recovered from, and they had also observed almost complete recovery after double extirpation of the arm area. Professor Sherrington had also investigated the direct pyramidal tract in anthropoids and found that in the chimpanzee a ventral pyramidal tract occurred as in man, and like that of man was of very variable individual character.

Dr. CAMPBELL read a paper on the

Histological Features of the Regions of the Cortex in Anthropoids, with Special Reference to the Varieties of Medullated Fibres and their Topographical Relations in the Cortex.

He found special characters in the motor region—viz., (1) the possession of a well-marked zone layer or tangential field; (2) a supra-radiary field; and (3) a radiary zone of great depth and richness in nerve fibres or of great "fibre-wealth"; further, there were large ganglion cells or cells of Betz in this region. These histological results were in complete accord with the experimental results of Professor Sherrington and Dr. Grünbaum, as the motor type of structure was bounded posteriorly by the fissure of Rolando and did not extend into the post-central convolution.

Professor SYMINGTON (Belfast), Dr. W. PAGE MAY (London), Professor W. H. THOMPSON (Belfast), and Professor ARTHUR ROBINSON (London) joined in the discussion which followed.

Professor R. G. ANDERSON read a paper on Occipital Condyles, illustrated by specimens and lantern slides.

Professor SYMINGTON described the Topographical Relations of the Optic Radiation and illustrated his remarks by lantern slide photographs of sections of the human brain.

PATHOLOGY.

FRIDAY, AUGUST 1ST.

Professor D. J. HAMILTON (Aberdeen) opened a discussion on

The Relationship between Human and Bovine Tuberculosis.

His own experiments were still in progress and he was not at liberty to publish them at present. He reviewed at length the work done by various investigators on this subject and drew attention to the remarkable results of Koch and Schultz. These results were uniform, and, as they stood, they justified the conclusions drawn from them which were recorded at the British Congress on Tuberculosis. These investigators failed to inoculate the calf with human tubercle bacillus by any means but they succeeded in producing tuberculosis from cultures of bovine tubercle and they concluded that the cow was immune to human but not to bovine tuberculosis. Professor Hamilton did not entirely agree with the reading of these experiments. In one of the inhalation experiments local infection had occurred in the lungs. Another observer had got similar results in pigs, general tuberculosis having been produced by feeding these animals on human tuberculous sputum. The speaker considered that there should be some common understanding on what was to be considered successful inoculation and what not. If it were agreed that a tuberculous growth at the seat of inoculation should not be considered successful inoculation, then the majority of cases of human tuberculous infection must be looked upon as not inoculable, for here there was, as a rule, only a local growth at the point of inoculation—e.g., the lungs. If extensive tuberculous lymphadenitis was produced in animals by inoculation this must be accepted as a successful inoculation on a new host. Probably in these animals the human bacillus had not yet become acclimatised to its surroundings. Experiments by other observers showed that the local infection from human tubercle produced in a calf was capable of producing general tuberculosis when transferred to another calf. The human tubercle bacillus developed slowly in the calf at first, but in time produced general tuberculosis. Chauveau had described numerous tubercles in the lungs of a calf by inhalation from human tubercle. This was at variance with the experience of other observers who found the mesenteric glands especially affected. He remarked upon the experiments of Professor Delépine. Arloing had injected emulsion of human tubercle bacilli into the jugular vein of goats, calves, sheep, asses, rabbits, and

guinea-pigs. The inoculation was positive in *all* cases without exception. Young animals were more sensitive to the bacilli; the goat was more resistant than the calf or the sheep. The bovine bacillus excited, as a rule, more acute and widespread disease than did the human, but the latter gained in virulence by inoculation from one calf to another. Variation in the microscopical appearances were meaningless and mere differences in form or virulence were a poor basis on which to found a classification of species. The human bacillus itself varied greatly in virulence from time to time. The question was not whether a given culture could be transferred, but whether any human tubercle bacilli could be transferred to another host without intervening conditions. Professor Hamilton regretted that Koch and Schultz had not used tuberculous glands in their experiments.

Professor SHERIDAN DELÉPINE (Manchester) congratulated Professor Hamilton on his admirable summing-up of the position. The experiments of Koch were so contradictory to general opinion and to the experiments of other observers that even his great name was not sufficient to weigh down the balance on his side. It must be recognised that different animals were not equally susceptible to organisms. He agreed with all that Professor Hamilton had said. Personally he had been able to produce in the calf true tuberculosis from human bacilli and from this he got tubercle bacilli which were still more virulent. The virulence of the human bacillus was variable and in his own experiments he used a combination of tuberculous sputa from different sources.

Dr. T. SHENNAN (Edinburgh) said that another criticism of Koch's work was that the bacillus tended to increase in virulence in passing through a series of animals of the same species and lost its virulence when transferred to an animal of another species. The susceptibility of man was different from that of other animals. Koch started his work from statistics, but Dr. Shennan thought this was a mistake. In Germany cooked milk was used; in this country the milk was uncooked and open to all infection. It would therefore be expected if infection were carried by milk that it would be more common in this country, but, on the other hand, bovine tuberculosis was less common here. Statistics had been compiled in the Edinburgh Children's Hospital and in the Great Ormond-street Hospital in London to estimate the relative frequency of respiratory and intestinal tuberculosis, and others had been made in Birmingham and in Germany. The results were similar in Edinburgh and London but were different in the other centres. He referred to the investigations of Dr. Bush of Philadelphia on the geographical distribution of tubercle in regard to meat and milk. He agreed with Professor Hamilton in regard to the personal equation of individual resistance. He then detailed three peculiar cases of tuberculosis, in one of which there were plaques in the peritoneum which he thought resembled bovine tuberculosis.

Professor NORTHRUP (New York) discussed the point of entrance of the tubercle bacillus. He had studied this subject for 12 years at the Foundling Hospital at New York, and the material extended over 3000 post-mortem examinations in which there was 1 per cent. of infants under three years in which the primary seat of tubercle was abdominal. The oldest process was in the lymph nodes of the mesentery, and if this represented the primary source then the infants of New York were exposed to very small danger from milk.

Mr. W. HODGSON (Crewe) related an experiment in which a healthy cow was fed on human tuberculous lymphatic glands in a trench for six weeks. At the post-mortem examination the oldest tuberculous disease was found in the lungs and the most recent in the intestinal tract. This showed that although the bacilli were taken in through the stomach they would proceed to the most suitable nidus before developing.

Dr. R. MAGUIRE (London) pointed out a possible fallacy in these cases. The inoculation might have been produced by inhalation during feeding on the tuberculous material.

Professor HAMILTON, in reply, said that he had seen the plaques described by Dr. Shennan several times in the human subject; they were very common in the cow but the similarity of appearances was of little importance. The point of entrance of the bacillus was, as Professor Northrup had insisted, very important. In a large proportion of cases there was no lesion of the intestine, but in practically all cases the abdominal glands were enlarged and cheesy, while the lungs escaped in most experiments. Subcutaneous injection of bacilli produced pulmonary tuberculosis almost invariably. His experience had taught him that the bacillus might not affect the point of inoculation but go elsewhere. There was no hard-and-fast line.

OPHTHALMOLOGY.

FRIDAY, AUGUST 1ST.

Dr. JAMES TAYLOR (London) opened a discussion on

The Rarer Forms of Atrophy of the Optic Nerve.

He began by thanking the officers of the section for the honour they had done him in inviting him to open this discussion and for their choice of a subject of interest both to physicians and surgeons and one on which they might give and receive mutual help and instruction. He excluded from discussion, except for purposes of comparison, atrophy following neuritis the result of intracranial growth and atrophy (primary) resulting from tabes or general paralysis. At the same time he emphasised the importance of recognising the frequent occurrence of optic atrophy in general paralysis; he had made post-mortem examinations on several cases of general paralysis in which the mental symptoms had been present only a short time, although the patients had been blind in some instances for a considerable number of years. It was also to be recognised that optic atrophy was not an uncommon result in the neuro-retinitis occurring in Bright's disease and also in cases of glaucoma and of injuries to the optic nerve. He referred first to the large class of cases of optic atrophy associated with disseminated sclerosis. These, he believed, were in most cases the result of a neuritis usually retro-bulbar in position, but in some cases obvious on account of redness and slight swelling of the disc. In some cases a central scotoma for colours was present; the pallor in these cases was slightly different from that in tabetic cases and the vessels were not so small. One very striking difference, also, was that in the vast majority of cases of optic atrophy in tabes the visual impairment went gradually but surely on to complete blindness; he had never in the numerous cases of disseminated sclerosis which he had observed seen complete blindness occur. Indeed, one was often surprised at the very fair vision which coexisted with extreme pallor of the discs. Dr. Taylor next referred to cases of toxic amblyopia and the atrophy which frequently accompanied it; he referred to the small quantity of tobacco which might cause amblyopia if sugar be present in the urine and to one patient who had been attended for 20 years and had never used tobacco but who had glycosuria and central scotoma. He asked what was the factor which in some cases of toxic amblyopia prevented recovery and was the atrophy in these cases likely to be a progressive one? He next referred to cases of optic atrophy not preceded by neuritis, occurring as a result of pressure at the chiasma and referred to the frequency with which such cases came under observation with one eye already blind, while the other had the temporal "field" blind. Dr. Taylor also referred to a case of optic atrophy which he had seen occur in a case of ordinary left hemiplegia in which there was no hemianopsia, and to the likelihood that these cases were not uncommon. He also referred to two cases of optic atrophy in young men the reason for which was obscure.

Mr. W. T. HOLMES SPICER (London) said that atrophy arising in disseminated sclerosis, though not always associated with much defect of vision, mostly began with a central scotoma which often became absolute, so that there was a resultant grave impairment of vision, though this rarely progressed to absolute loss of peripheral vision. Many cases remained in this condition for years; he thought that the cause lay in islands of sclerosis in the optic nerve itself. He could not agree to the doubts which Dr. Taylor had thrown on the frequency of toxic atrophies. Difficulty often arose from the deceit of the patient. This, again, accounted for much failure of treatment in such cases. In diabetes he had no doubt that central scotoma occurred, yet this might be greatly exaggerated by the incidence of tobacco. Many scattered and obscure cases, especially in young people, he thought to be connected with hereditary causes—Leber's disease. An anatomical explanation had been given for such cases in congenital deficiency of the walls of the optic foramen and contiguity of the nerve with the nasal sinuses. He felt that this could not explain all.

Dr. EMRYS JONES (Manchester) said that he had noted a rare case of optic atrophy associated with dropping of fluid from the nose.

Dr. C. O. HAWTHORNE (London) had seen cases where

blindness in one and loss of the temporal field in the other had occurred after erysipelas of the blind side; it was supposed that the transference of the affection from one side to the other was due to some sympathetic connexion. He had grave doubts as to the certainty of diagnosis of optic atrophy based upon the appearances of the optic discs alone and in the absence of other signs in vision and visual fields.

Dr. A. BRONNER (Bradford) quite agreed with Dr. Taylor that in many cases diagnosed as tobacco amblyopia the impaired vision was due to other causes; many were due to commencing central retinal and choroidal changes which disappeared on the use of iodide of potassium. It was important in all cases of optic atrophy to take out the field of vision for colours as well as for white; by so doing very early changes could be noted.

Dr. G. NEWTON PITT (London) believed that the relative frequency of central scotoma in disseminated sclerosis in cases published in England was small, it was much higher on the continent. The pathological material available was very small indeed, which somewhat vitiated conclusions. He agreed that it was not justifiable to diagnose optic atrophy from disc colour alone; there must also be diminution of the vision and field.

Dr. S. LODGE (Bradford) noted the occasional occurrence of such cases with scotomata and contraction of fields in quite young people from 16 to 30 years of age. In two of these he had been able to obtain histories of toxic trade connexions and in others a record of like cases in other members of the family.

Mr. J. HERBERT PARSONS (London) called attention to a tendency to put the lesions in all these cases in the optic nerve itself. In many of them it was probably in the retina. The evidence in favour of this in the case of toxic amblyopias was increasing rapidly. Attention was especially directed to the work of Birch-Hirschfeld on the subject.

Dr. J. G. CLEGG thought that many of the cases of quite white discs with excellent vision were those of early tabes.

Mr. N. BISHOP HARMAN (London) said that he had for some time been unable to accept the current views of the pathology of optic atrophy in retro-bulbar neuritis, &c.; he believed it to be based upon an inaccurate appreciation of the ascertained facts of the development of the nervous connexions of the eye and of the theory of the neuron. The retina was known to arise as an outgrowth from the brain; within this outgrowth nerve-cells gave rise to axons which grew centrally to make connexion with parts of the brain different from the site of origin of the evagination. Thus the trophic centres for the optic nerve-fibres were the ganglion cells of the retina from which they were out-growths; the case was parallel with the relation of a posterior root ganglion cell to its central axon passing into the cord. Thus, degeneration of the optic fibres should be in the vast majority of cases ascending only, and they should look in cases of optic atrophy first to the retina for evidence of damage. He believed that a rational classification could be arrived at as follows: 1. Primary damage in disease of the ganglion cells: (*a*) from anæmia due to spasm of the retinal vessels from drugs as quinine, reflexly from cold, and to general anæmia succeeding severe hæmorrhages, febrile diseases, &c.; and (*b*) from poisoning of the ganglion cells by drugs, tobacco, and lead, a view directly supported in the antidote of tobacco blindness, strychnine, which was agreed to act directly upon nerve-cells. In all these cases the changes at the disc would be proportionate to the number of cells damaged; in cases of great loss of ganglion cells it was probable that the rapid destruction and swelling of the myelin sheaths of the degenerating fibres at the lamina cribrosa produced a mechanical choked disc. 2. Cases of damage to the optic nerve by contiguity of diseased structures or in general nerve changes producing islands of fibroid exaggeration and followed by obvious atrophy of the disc. Here ascending degeneration should be the earlier result, with a later degeneration of the axon segment next the trophic ganglion cell from disuse, a process the more easy owing to the special myelin sheathing of the optic nerve fibres.

Dr. A. MCGILLIVRAY (Dundee) asked Mr. Harman how he could explain undoubted optic atrophy following section of the nerve in fracture of the optic foramen if he believed only in ascending degeneration.

Mr. HARMAN said that in these cases there was nothing to show that the damage was limited to the actual point of injury; exudation was just as certainly to be found within and around the optic sheath even to the disc which would explain the early onset of atrophy in some cases; further, he allowed the possibility of a degeneration of the segment twixt injury and trophic cell both from disuse and by reason of the arrangement of the myelin sheaths of the optic fibres.

Dr. A. HILL GRIFFITH (Manchester) thought that the occurrence of atrophy after hæmorrhage, hæmatemesis, &c., had been overlooked; it certainly occurred. He also noted the greater susceptibility of women to tobacco than men both in rapidity of onset and slightness of cause.

Dr. MCGILLIVRAY said that though he had little experience of hysterical amblyopia in Dundee there were numerous cases of tobacco blindness in mill women; the liability he thought partly due to the late age of their indulgence.

Dr. TAYLOR, in replying, said that he did not mean to throw doubt on the frequency of occurrence of tobacco-blindness, he felt that it was unduly credited with cases arising from other causes. He had had no reply to his inquiry as to the progression and permanence of optic atrophy in these cases. As regards the greater susceptibility of women he noted also their readier reaction to alcohol poisoning as exemplified in the greater frequency of alcoholic neuritis amongst them.

DISEASES OF CHILDREN.

FRIDAY, AUGUST 1ST.

Mr. W. ARBUTHNOT LANE (London) opened a discussion on

The Value of Physical Exercises in Diseases of the Respiratory Tract.

He described the influence of systematic and regulated exercises upon the upper part of the respiratory passages and emphasised the positions which he had previously defined[1] in reference to the relationship of such exercises to naso-pharyngeal obstruction by adenoids, &c. He also discussed the several factors that modify the condition of the teeth and the digestion in patients suffering from respiratory incapacity, together with the effects of such incapacity on the tendency to catarrhal processes. He advocated the study of the respiratory function with a view to treatment in each individual case.

Sir FELIX SEMON (London) had a high appreciation of the value of respiratory exercises. They had their own place and value, but he could not accept the view that they could overcome the mechanical obstruction produced by adenoid masses in the naso-pharynx.

Professor BAGINSKY (Berlin) said that some children were the subjects of adenoids at the time of birth and in these cases at all events the condition would not be attributed to respiratory inefficiency. He agreed that in many cases operations for adenoids were unnecessary, a change to the seaside being often sufficient to cause their disappearance.

Dr. J. J. COX (Manchester) endorsed this last statement on the basis of a considerable personal experience.

Dr. HARRY CAMPBELL (London) directed attention to the feeding of children by soft food as an influence prejudicial to the development of the masticatory apparatus, and argued that this led to imperfect expansion of the upper air passages.

Dr. SCANES SPICER (London) and Dr. P. MCBRIDE (Edinburgh) took part in the discussion.

Mr. MAYO COLLIER (London) said that neither Mr. Lane nor any other surgeon had suggested that breathing exercises could cure well-marked adenoids. Sir Felix Semon's statement that nasal obstruction had no relation to the production of post-nasal growths was unsupported by evidence. The experience of most surgeons was directly in the opposite direction. Nasal stenosis caused vascular engorgement in the post-nasal space and as further results catarrh and adenoid hypertrophy. It was not necessary to nasal stenosis that there should be a definite bony or other form of tumour. A lax, atonic condition of the turbinal body with the vascular distension that was inevitable when the patient was lying down, and also in other circumstances, was quite sufficient to cause stenosis and to lead to disuse of the nasal airway. As a matter of fact this was usually the condition present. The defective development of the upper jaw and palate which attended nasal stenosis Mr. Collier attributed largely to atmospheric pressure.

Mr. ARBUTHNOT LANE replied.

[1] THE LANCET, Feb. 15th (p. 432), and 22nd (p. 498), 1902.

At a joint meeting with the Pathological Section Dr. J. W. BALLANTYNE (Edinburgh) opened a discussion on

The Congenital Diseases of Bone.

After a brief sketch of the various stages in the ante-natal history of bone Dr. Ballantyne said that it was necessary to recognise the general principle that the effects upon the skeleton of prejudicial influences would be very different according to the stage at which such influences came into operation. In the earliest stage the tendency would be to produce deformities or malformations, whilst it could only be when osseous tissue had been definitely formed that true diseases of bone could be produced. Thus anencephaly resulted from an early arrest of the formative processes of a part of the skeleton, whilst cranio-tabes was a morbid change in fully-formed bone. Between such extremes were intermediate links which might be viewed from either or both aspects. This principle was advanced as bearing on the question of fœtal rickets and it was urged that provided the causes which produce rickets in extra-uterine life came into operation during intra-uterine existence the skeleton would necessarily be affected. There would be conditions of the cartilages and bones which might be called rickets and which etiologically were rickets. But in these conditions the histological changes might be expected to be different from those of extra-uterine rickets because the bones had not reached a stage of development in which such changes could possibly be produced. Various other early diseases of bone were described and illustrated by lantern slides and Dr. Ballantyne concluded by emphasising the importance of the placenta in relation to the nutrition and development of the fœtus.

Dr. W. STOELTZNER (Berlin) could not unreservedly accept Dr. Ballantyne's classification of congenital bone disease. He preferred to state only two groups—namely, (1) those due to arrest of periosteal formation and (2) those resulting from a general dystrophy. On the question of fœtal rickets his appeal was to the microscope, and this never revealed the characteristic features of rickets. Numerous microscopical specimens were shown to support these views.

Dr. JULES COMBY (Paris) considered that the term "rickets" had been too generally applied to diseases affecting the skeleton in the early period of life. The recognition of the influence of developmental defect, of syphilis, and the explanation of such conditions as achondroplasia were all steps in advance.

Professor BAGINSKY (Berlin) held very confidently that rickets might and did occur during intra-uterine life. He had satisfied himself on this point by repeated microscopical examinations. He also described various clinical varieties of rickets as met with in young children.

LARYNGOLOGY.

WEDNESDAY, JULY 30TH.

Dr. EDWARD LAW (London) showed a case of

Papillomatous Excrescences, or Ozænic Incrustations, or Chalky Deposits, or Other Lesion Low Down in the Trachea.

The patient, a woman, aged 36 years, had suffered from ozæna since childhood and had to a great extent recovered under various methods of treatment; she was anxious to get quite well if possible and had recently lost her sense of smell. Formerly the voice was very husky and hoarse but not recently, and laughing often produced a fit of coughing. From the age of 18 years she had often had to clear away something low down in her throat and had said that she would die from consumption on account of a feeling low down in the windpipe. She now complained of constant short hacking cough, loss of smell, indifferent taste, and a very slight discharge from the nostrils. There was no history of a foreign body, no dyspnœa or expectoration, and the general health was satisfactory. On examination no atrophic changes were found in the nose, pharynx, or larynx; in fact, nothing abnormal beyond some slight catarrhal trouble and a small crust in the neighbourhood of Luschka's tonsil. Nothing being found to account for the short hacking cough the trachea was carefully examined and a number of papillomatous excrescences or crust-like or cretaceous deposits were seen, a large one with ragged edges on the right side, another larger mass deeper down, and a number of smaller nodular ones dotted in an annular or crescentic arrangement around the trachea; the colour and appearances changed a little if covered with secretion. The other part of the mucous membrane of the trachea corresponding to the first seven or eight rings was healthy. The diagnosis, in Dr. Law's opinion, was very uncertain. He had thought of papillomatous excrescences, possibly more or less calcified, ozænic incrustations, herpetic crusts, keratosis, and enchondromata and chalky deposits. The patient was brought before the members of the Laryngological Society of London at a meeting last May, and in order to emphasise the difficulty of diagnosis Dr. Law quoted from the proceedings of the society some of the views expressed. Dr. E. B. Waggett was persuaded that there were no crusts; he regarded the excrescences as being of a papillomatous nature. Dr. H. Lambert Lack suggested that the growths in the trachea might really be crusts. The fact that the appearances had not changed in 24 hours, in Dr. Lack's opinion, in no way militated against his view. Sir Felix Semon gave a diagnosis of ozænic crusts and was induced to take this view by the co-existence of crusts in the naso-pharynx, and he saw the patient again a month later and confirmed his previous diagnosis of ozænic crusts.

Mr. T. MARK HOVELL (London) expressed the view that the growths were papillomata and perhaps associated with changes in some of the adjacent lymphatic glands.

Dr. W. JOBSON HORNE (London) had failed to see any crusts and considered that if they had been present there must be some underlying cause for their formation. He thought that the diagnosis rested between three conditions—cartilaginous excrescences from the rings of the trachea, calcareous deposits, and papillomata. The appearances in the mirror reminded him of specimens which he had seen of spicules and nodules, composed of hyaline cartilage, projecting from the lower rings of the trachea. He had seen two such specimens abroad, but knew of only one in London and that was in the museum of St. Bartholomew's Hospital, and was the one to which he had drawn Dr. Law's attention.

Sir FELIX SEMON (London) attributed the appearances to the presence of ozænic crusts in the trachea.

Dr. J. MACINTYRE (Glasgow) considered that perhaps an examination with the x rays might have been of some assistance in arriving at a diagnosis.

Dr. P. MCBRIDE (Edinburgh) thought that the condition was due to chalky deposits in the trachea.

Professor KILLIAN (Freiburg) was of the opinion that the arrangement and appearances of the growth suggested horny growths springing from the rings of the trachea in its lower part.

Dr. LAW, in thanking the members of the section for the great interest that they had taken in his case, said that the appearance in the trachea differed from a specimen which Dr. Horne had shown him of papillomata in the trachea, but in some respects it resembled the specimen in the museum of St. Bartholomew's Hospital. He could not agree with Sir Felix Semon's opinion of crusts, although at the first examination in London there was a much greater appearance of crusts than subsequently. Professor Killian had kindly offered to examine the case with the bronchoscope, which would probably lead to an accurate diagnosis, or the use of the probe would differentiate between crusts, papillomatous excrescences, or calcareous deposits; in the meantime he would strongly speak in favour of calcareous deposits (or at least of excrescences which had undergone calcification). He took this view on account of the large number of disseminated white nodules which had not changed in appearance whilst under observation for four months.

Professor KILLIAN afterwards examined the patient's trachea by direct endoscopy with the bronchoscope, and the excrescences were seen and upon being touched with a probe were found to be of bony hardness.

FRIDAY, AUGUST 1ST.

Dr. L. GRÜNWALD (Munich) contributed a paper on

The Present State of the "Ozæna" Question.

He said that it was not easy to speak about "ozæna," for there were nearly as many definitions of this term as there were authors. He did not acknowledge ozæna as a disease *sui generis*, but accepted the term for a condition of badly smelling pus in wide nasal passages, and this, the most prominent feature, and its explanation, formed the subject of his remarks. Speaking first concerning the origin of the secretion he said that if properly examined the secretion of all cases of ozæna would be found to arise from focal disease; where one failed to find it there was not an absence of foci,

but they were too obscure to be easily detected. He considered that the reservation made, for example, by Hajek, that the focal disease might be only secondary to the general mucous inflammation, was quite artificial, and had derived no support from Wertheim's 360 necropsies with 95 cases of disease of the accessory cavities. Hajek himself weakened this objection by saying that he had seen cases in a very early state of disease (half a year or so after its commencement) where the secretion could already be proved to be due to focal suppuration. But this statement, he said, would not explain why the secretion in a certain number of cases of focal diseases assumed that peculiar form which was commonly called "ozæna." From whatever place the secretion might arise it was not to be denied that under certain conditions, or in certain forms, it might be caused by certain and specific infection (just as specific infection was compatible alike with general and with focal inflammation). And thus they had the attempt to give them etiological factors of general value by proving the presence of specific bacilli. In this respect they had first the bacillus ozænæ of Lœwenberg, then the bacillus mucosus of Abel, and latterly the cocco-bacillus fetidus of Perez, each of which was said to be the cause of ozæna. But none of these had fulfilled the exigencies of a real pathogenesis—namely, that they produced the disease in question in all its forms. The first produced neither crusts nor atrophy, the second no atrophy, and the third neither crusts nor fœtor. Interesting though the investigations of Perez of Buenos Ayres into the correlation between dogs' noses and human infection might be their correctness in European circumstances still required proof and did not seem probable when they considered the enormous number of dogs and the rarity of ozæna in Bavaria as opposed to the scarcity of dogs and the frequency of ozæna in Northern Germany. Nevertheless bacteriological researches had brought to notice a very curious circumstance—that the bacillus of Abel produced in cultures a gelatinous tough mass. As this bacillus was found principally beneath the true crusts in the tenacious mucus adhering to the mucous membrane it appeared to have a specific relation to ozæna, causing that tough and sticky character of the secretion. Further, it was not impossible that altered secretion might produce a fluid of more serous character, the coagulation of which might possess greater adherent powers. But this was only a hypothesis, which was not proved even by Schonemann's discovery of degenerated Bowman's glands, for degenerations of the same source would be found in hypertrophied turbinated bodies. This toughness of the secretion would cause it to become fixed in the nose long enough to become putrid and to produce the fœtid smell which was met with also in all other forms of putrefaction of moist masses. The assumption made by some rhinologists that this smell was specific had been objected to by others who were zealous defenders of the ozæna theory—namely, M. Schmidt, Moll, and others. As to other theories on the etiology of ozæna Hopmann, Siebenmann, Gerber, and Cholewa-Cordes all considered the atrophy as the primary source of all the other phenomena. But it would be difficult to state a reason why the atrophy of the whole tissue or that of the mucous membrane alone should produce a secretion thus altered without having regard to the unlikeliness of an increased secretion being due to an atrophied membrane in which even the secreting glands had undergone destruction. Moreover, all these theories did not discriminate between congenital wideness of the nose and acquired atrophy; the occurrence of the former alone being proved by the fact that wide noses were found without the least discharge. If a suppurative process became established in such a nose it found conditions favourable to the establishment of ozæna, as the discharges were likely to be retained long enough to become putrid. Even from Cholewa-Cordes's researches it followed that atrophy, of the mucous membrane at least, was not the cause, but the consequence, of the altered secretion due to the compression and irritation caused by the adherent and putrid crusts. As to treatment, there was a long series of remedies recommended and most of them had found their well-deserved fate; others could produce a perceptible improvement in many, if not in all, cases. It was true that only radical focal treatment had up to now been able to do away with all secretion, but it could not be denied that imperfect focal treatment, as well as general treatment, of the mucous membrane could in some cases alter the whole condition so far that the troubles disappeared. This seemed a strong objection against the statement that the disease was always due to a focal affection; he had never denied, but on the contrary affirmed, that a great many other factors were required to change the focal secretion into that peculiar to ozæna. If these factors were abolished, even without removing all secretion, there would be in favourable cases apparent recovery, which practically might approach to a cure. Considering the very great difficulties of radical treatment of focal suppurations in many cases, and especially in disease of the maxillary sinus, it would in each single case be a question for consideration whether to take the uncertain way of relief by general measures or the more certain but troublesome one of radical cure by treatment of the focal disease.

OTOLOGY.

WEDNESDAY, JULY 30TH.

The PRESIDENT (Dr. W. MILLIGAN of Manchester), in opening the proceedings of the section, spoke of the need for increasing the teaching of otology and aural surgery with a view of curtailing the amount of ear disease more particularly due to the exanthemata. He expressed the hope that house surgeons would be required to produce certificates of experience in aural surgery before undertaking their duties.

A discussion was held on the Aims and Limitations of Intra-nasal Surgical Procedures in the Treatment of Chronic Non-suppurative Middle-ear Disease.

Dr. J. DUNDAS GRANT (London) read a paper on

Cholesteatoma of the Middle Ear.

In this communication attention was drawn to the occasional occurrence of spontaneous cure of cholesteatoma of the middle ear, the contents finding their way out by causing erosion of the outer wall of the attic and the antero-inferior wall of the antrum, leaving such an opening as resulted from a well-performed radical mastoid operation as devised by Stacke. Dr. Dundas Grant considered that in well-marked cases of cholesteatoma, when a radical operation was performed and a large cavity was found to be filled with cholesteatomatous masses and lined by a homogeneous membrane, the operator might with economy to the patient's time and tissues leave that membrane *in situ*, simply scraping out the contents and sterilising the lining with alcohol. It was understood, of course, that by the operation the antrum, the attic, the tympanum, and the external meatus were thrown into one large cavity. In several well-marked cases he had found that this practice was followed by speedy subsidence of the discharge and satisfactory after-results. The mode of formation of cholesteatoma was described, the stages being ulceration of the walls of the cavity followed by granulation, then under favourable circumstances the squamous epithelium from the outer surface of the tympanic membrane and wall of the meatus grew inwards through the perforation in the membrana tympani and proliferated over the granulating surfaces, just as in the case of an ulcer on the surface of the body. In some cases this extended over the whole of the inner surface of the cavity which was then lined with epidermoid epithelium. Under the influence of moisture or inflammation a process analogous to dermatitis took place, resulting in desquamation and the gradual accumulation of layers of epithelium; those in the centre broke down, and as the mass increased the resulting pressure induced erosion of the surrounding bone, sometimes, unfortunately, towards the lateral sinus and cranial cavity, but in lucky cases towards the external auditory meatus. In cases of disease of the petrous bone in which on radical operation there was found to be only a small cavity Dr. Dundas Grant thought that healing might be allowed to take place by means of cicatrisation on the surface of the granulations—the old method. When, however, the cavity was at all considerable in size and not lined with "cholesteatoma-membrane," he held that there was no mode of treatment at all to approach in excellence the method of skin-grafting perfected by Mr. C. A. Ballance. In case of a cavity completely lined by pearly membrane he advocated the retention of this membrane and its sterilisation by means of alcohol.

Dr. URBAN PRITCHARD (London) said that in his opinion the enlargement of the antrum and mastoid cells in a typical case of cholesteatoma was chiefly due to pressure and not to ulceration of the bone, as was the case in ordinary mastoid

disease. This was proved by the hardness and smoothness of the bony walls of the cavity which was moreover lined by a thin altered mucous membrane. At the same time he agreed that there were always some spots of ulceration to be found.

FRIDAY, AUGUST 1ST.

Mr. C. A. BALLANCE (London) and Mr. HUGH E. JONES (Liverpool) opened a discussion on

The Indications for and against Ligation of the Internal Jugular Vein in Cases of Otitic Pyosepticæmia.

Mr. Ballance in summarising his conclusions pointed out that the surgeon from his examination of the case must, if possible, come to a clear determination as to the condition from which the patient was suffering—whether from acute systemic infection or from systemic disturbance depending upon a local process. He considered that operation upon the vein was indicated in the following circumstances: (1) in acute pyæmia and in acute septicæmia whether the sinus was occupied by clot or fluid blood; (2) if the sinus wall was gangrenous or its contents were putrefying, unless it was perfectly clear that on both sides of the area of inflammation the lumen of the sinus was completely blocked by non-infected thrombi; (3) if it was proved, or even suspected, that the blood of the jugular bulb was in part or wholly clotted; and (4) if the jugular vein was thrombosed. When it had been decided to deal with the vein before beginning to operate the operation on the vein should precede that on the temporal bone, and when the operation on the vein was first decided upon during the course of the temporal bone operation it should forthwith be carried through without waiting for the completion of the operation on the sinus region.

Mr. HUGH JONES in his paper arrived at the following conclusions. 1. Where the clot in the sinus was firm at both ends, though broken down in the middle, and there was little or no cord in the neck, it was sufficient to remove so much of the clot as appeared to be undergoing disintegration and to treat the sinus as an open wound. 2. Where there was no cord in the neck, but on exploration the sinus was found to be permeable though obviously infected, whether lung complications existed or not, the surgeon should obliterate the sinus and tie and divide the vein. 3. Where the sinus had been dealt with but the vein had not been tied and the pyæmic symptoms continued or recurred it was necessary to consider carefully in which direction in the sinus the extension was occurring. (*a*) If it was occurring towards the torcular, whilst the bulbar end continued sound, there was nothing to be gained by tying the vein; (*b*) if the torcular end was sound whilst a cord was forming and spreading down the neck, whether lung complications had set in or not, the vein should be tied and divided.

Dr. DUNDAS GRANT, in continuing the discussion, considered that the vein should be ligated if suppuration was extending in a clot in the jugular or if symptoms of septicæmia persisted after clearing out the sigmoid sinus, or if, on opening the sinus, suppuration was found to extend lower down than could be reached. The vein need not be ligatured if the broken down clot was bounded in each direction by a margin of firm organising clot. He deprecated ligature of the vein apart from clearance of the sigmoid sinus. As evidence of complete thrombosis in the bulb of the jugular he mentioned absence of fluctuation between one finger on the exposed sinus and another on the internal jugular vein.

The PRESIDENT spoke of the difficulty in the selection of cases for ligation of the vein. Tenderness at the apex of the mastoid process indicated inflammation around the walls of the jugular vein and the necessity for the ligation of the vein. In his experience those cases in which the jugular had been tied had given favourable results.

Dr. F. ROHRER (Zürich) read a paper on the Relation between the Formation of the Auricle of Anthropoid Monkeys and certain Congenital Malformations of the Human Auricle.

Dr. A. BRONNER (Bradford) showed

An Apparatus for the Intra-tympanic Hot-air Treatment of certain Forms of Catarrh of the Middle Ear.

He confined his remarks to a description of the apparatus, which had been made for him with a view of overcoming difficulties in regulating the temperature of the air used. The heating power was electricity. The hot-air treatment had been found to be of service in certain forms of middle ear catarrh which had baffled other treatment, and on that account Dr. Bronner showed the apparatus.

Mr. T. H. PINDER (Manchester) had observed benefit to be derived from the external use of hot air in some cases of intractable middle ear catarrh.

Dr. R. C. ELSWORTH (Swansea) made a communication entitled,

Remarks on the Anatomy of the Temporal Bone.

The particular point dealt with was a cavity situated immediately behind the antrum; this cavity Dr. Elsworth had found to be constant in the specimens he had examined and his observations had been confirmed by observers abroad. Dr. Elsworth exhibited several sections of temporal bones showing the cavity and demonstrated its relations by means of lantern photographs. A vertical section passing backwards and slightly outwards showed from before backwards—tympanum, antrum, and the cavity to which Dr. Elsworth suggested giving the name "accessory antrum." The sections also showed the close relationship which the cavity had with the sigmoid sinus. A vein had frequently been met with in the cavity and at times led directly into the sinus itself. Dr. Elsworth commented on the importance of this vein as a factor in spreading infection when the sinus was the site of disease.

Dr. J. KERR LOVE (Glasgow) criticised the introduction of a new term into the anatomy of the temporal bone for the description of this particular air-cell.

Dr. W. JOBSON HORNE (London) pointed out how important it was in the operative treatment of disease of the antrum to be aware of these aberrant cells. He also agreed that it was as well to curtail as far as possible the nomenclature of the temporal bone; the term "accessory antrum" as suggested by Dr. Elsworth was more explicit than was the name "mastoid cell." The vessel met with in this accessory antrum, and described as passing into the sigmoid sinus, reminded Dr. Horne of the petro-squamosal sinus which had been carefully investigated by Arthur Cheatle. Its pathological importance, especially in childhood, was probably not sufficiently appreciated.

Mr. HUGH JONES considered that the vein to which reference had been made was the petro-squamosal sinus.

LARYNGOLOGY AND OTOLOGY.

THURSDAY, JULY 31ST.

A conjoint discussion was held by these two sections on

The Etiology and Diagnosis of Ethmoidal and Sphenoidal Suppurations.

Dr. L. GRÜNWALD (Munich), in opening the discussion, said that the etiology of these two diseases corresponded in general with that of other focal suppurations of the nose; they were acute infectious disorders of general or local origin. The principal factor in the production of a chronic disease from an acute inflammation in this situation was impediment to free discharge. The sinuses in question had their openings situated at their deepest and most dependent parts—that was, under the most favourable conditions for drainage. This, however, would be altered by swelling of the adjacent mucous membrane, and to this the ethmoidal bone especially was much exposed. Such a swelling might be superadded to a previous acute inflammation of the cells themselves, or it might be the consequence of an inflammation in an adjoining cavity. Sphenoidal, and ethmoidal suppurations rarely occurred alone; in most cases they were combined with suppuration of other cavities, or they might occur together. Ethmoidal suppuration was found alone more frequently than was sphenoidal, and this statement would be only slightly changed by the consideration of the much greater difficulty of making the diagnosis in the latter affection. In his own cases sphenoidal suppuration was combined with ethmoidal disease on the same side in 73 per cent., but in ethmoidal affections the same combination existed in 40 per cent. only. Chronic sphenoidal disorders were therefore frequently secondary to those of the ethmoidal bone. He had seldom met the combination of sphenoidal and maxillary antrum disease, though other authors had more frequently seen this. The combination of ethmoidal with maxillary suppurations was more common; and although he did not in the least agree with Weil's view, that all obstinate maxillary suppurations depended upon disease of the ethmoidal bone, he agreed that suppuration of the ethmoid alone was frequently diagnosed when only one

or other of its cells might be slightly affected, whilst the more important and fundamental maxillary inflammation was overlooked. It seemed to be unknown, but he had no doubt that adenoid growths could infect the ethmoidal as well as the sphenoidal cavities directly by their secretion, and could prevent by the maintenance of swelling the natural cure by drainage of these cavities when once infected.

Speaking of subjective signs, he said in some cases of sphenoidal inflammation no complaint might be made, but in others vertigo, pains of occasionally excruciating character on the vertex, deeply in the head behind the eyes or, by false localisation, in the region of the ears, or not uncommonly in the occiput, were present. But how uncertain subjective signs in general were might be gathered from Schäffer's and his own observations of typical supra-orbital and infra-orbital neuralgia in such cases. These symptoms, unexpected as they might be, were not merely accidental, but were caused by an irritation of the spheno-palatine ganglion, the immediate neighbour of the sphenoidal cavity. The thoroughly false view that the causes of pains must be found near their localisation often led to the general mistake as to the frequency of frontal suppuration. Loss of smell frequently accompanied chronic sphenoidal suppurations in consequence of the obstruction to the fissura olfactoria. Ophthalmic troubles, such as asthenopia, scotoma, painful irritation of the ophthalmic nerves, and deterioration of writing power, as noted by Schäffer, were explicable by the neighbourhood of the orbital and the basal nerves. Pain was usually more violent in acute inflammation, but then it was on account of radiation to more distant regions still more uncertain as a diagnostic sign. The same held good with disease of the ethmoidal bone, only here the troubles were usually more severe than in any other cavity, and here more especially those disagreeable complications of constant pain, mental depression, and intolerance to nervous excitement might be found. Asthenopia was also frequent, and the pain would often be referred to the region of the eyes. Supra-orbital neuralgia might occur here as well as in frontal empyema, combined with tenderness on pressure. Special to ethmoidal disease was the pain produced on pressing the lachrymal bone, a fact which was examined by the vicinity of the lamina papyracea.

Concerning objective signs Dr. Grünwald agreed with Hajek in his division of the ethmoidal bone into cells of the upper and middle meatus, and thus he considered that the old difficulties in settling the places of discharge for anterior, middle, and posterior cells were removed once for all. Cells of the upper meatus as well as the sphenoidal antrum discharged into the recessus spheno-ethmoidalis, and the pus of both cavities would therefore more frequently flow down to the naso-pharynx than would that of any other cavity and would produce the well-known appearance of post-nasal catarrh. When the pus ran forwards it was nearly always found in the space between the middle turbinated body and the septum. Dr. Grünwald said that this localisation was not of absolute diagnostic value; only a discharge rapidly re-forming after its removal and gushing out would signify its descent from one of the cavities in question. The anterior cells emptied themselves into the hiatus semilunaris or into a posterior part of the middle meatus, and their openings might thus be easily mistaken for those of the maxillary and frontal sinuses as the openings of all these cavities were very close together. One diagnostic sign to which he drew special attention was the purulent and even fœtid character of the secretion in contrast with the more frequently muco-purulent or mucoid character of that from the maxillary antrum. Speaking of the secondary disorders of the mucous membrane, he said that they were generally of less significance. Polypoid degeneration of the middle tubinated body was equally significant of suppuration of the anterior labyrinth of the larger cavities. Isolated inflammations of the labyrinth hardly ever occurred without the production of polypi, the mucous membrane of this region being particularly prone to œdematous degeneration. When in cases where no suppuration might have been apparent previously multiple polypi in the region of the middle turbinated bodies were torn and not cut off so that some bone was removed with them, it often happened that œdematous growths within the opened cells or holes of the middle turbinates would be observed—a true sign of previous ethmoidal inflammation; the secretion in these cases was scanty on account of the advanced degeneration of the glands and vessels, so that it was practically hidden behind the tumours. In the same manner a production of polypi would often persist for a long time after the cessation of the ethmoidal suppuration. The rhinoscopic appearances in sphenoidal suppurations alone scarcely differed from the normal; those of ethmoidal inflammation varied according to the different pathological forms of labyrinthine disease. The closed or ethmoidal empyema proper produced an expansion of the affected part of the labyrinth or its appendages (the bulla ethmoidalis or middle turbinal) and gave the aspect of a bony bladder within or by the side of the concha. Latent open suppuration might exist without any visible effect, but in the majority of cases there were smaller or larger hyperplastic growths on the middle turbinal, and very often the participation of the deeper tissues became evident by the appearance of a considerable extension of a concha, the surface of which was covered with granulations or polypoid degenerations, so that it occasionally appeared double. Distinct though these appearances might be, the diagnosis would never be sure until the presence of pus within the cavities was proved. For this purpose the probe was used. Roughness or caries of the bone or the presence of the soft or loose necrotic particles might be found, but all these signs were of but secondary value. As to the position which the probe had to occupy in the sphenoidal cavity and the distance of this cavity from the anterior nares, he said that it was impossible to give absolute measures of distances and heights of the ostium, as these differed too much to allow of any certainty. In general the ostium was situated opposite to the posterior end of the upper turbinated body, and that the probe was in the proper position would become evident only by the impossibility of moving it downwards. The same was true as regarded the control of its position in the ethmoidal cells, in contradistinction to the recessus spheno-ethmoidalis (for cells of the upper meatus) and to the middle meatus (for anterior cells). The former could be reached from the recessus by a probe with a lateral bend, the latter from the middle meatus on both sides. A division of the sphenoidal antrum by a vertical or horizontal septum could thus be recognised by the probe and had a very great practical value. Whether this deformity was caused through the formation of a septum or by the dislocation of a posterior ethmoidal cell could scarcely be made out in the living subject. Congenital abnormalities in the cavity might render their exploration quite impossible. For the diagnosis of disease of adjoining cavities the application of a temporary tamponade was of the greatest value. In some cases to get sufficient room it was necessary to make a resection of the anterior part of the middle turbinal and in ethmoidal suppurations this preliminary operation could rarely be avoided for proper treatment. In sphenoidal suppuration this operation was only exceptionally demanded. Whatever cavity might be thus explored suppuration in it would not be decided unless pus was running down along the probe or could be drawn or washed out by a cannula. The seriousness of the disorder and the further indications for its treatment would become evident by testing the state of the bone and soft parts with the probe. Diagnosis would naturally be much facilitated by some of the signs thus obtained, especially when the probe got immediately through the mucous tissue into cavities by the feeling of loose bone, &c. In doubtful cases the examination of both sides of the nose should never be forgotten, as it was possible that an empyema of one ethmoidal labyrinth might discharge on the other side through a septal perforation. Lastly, a warning was given against wrongly diagnosing ethmoidal and sphenoidal suppuration when a malignant growth was really present, the early stages of which might simulate suppuration with inflammatory hypertrophies. Only great experience and attention to the whole course of the disease could prevent such an error.

DERMATOLOGY.

THURSDAY, JULY 31ST.

Professor T. C. GILCHRIST (Baltimore) read a paper on

Blastomycetic Dermatitis.

It was preceded by a lantern demonstration of a large number of slides illustrating the occurrence and the life-history of the blastomyces and the organism of so-called "protozoic dermatitis." Professor Gilchrist commenced by describing a case which had been recently under his care. The patient was a negro (and this point was noteworthy because

the disease had not previously been described as occurring in a negro) in whom there was a marked family history of phthisis. For the last six years he had been in the penitentiary for manslaughter and evidently the disease had been contracted there. About two years ago a small sore appeared on the abdomen; it caused no pain. It enlarged gradually until it formed an ulcer measuring nine centimetres by 16 centimetres, and a second ulcer was also present nearly as large. The lesion was evidently superficial, for the skin could be moved over the deeper parts; the edges were studded with minute abscesses. For one month there had been swellings in the groin and right axilla. The temperature varied, rising as high as 101·5° F. The lungs were unaffected. The blastomyces was present and easily found. Rapid improvement occurred under large doses of potassium iodide (100 grains three times a day). Up to the present 33 cases of blastomycosis of the skin had been described (22 in men and 11 in women) and five cases of protozoic dermatitis. Of all these only two had been seen in Europe, and of these one came from America. It might therefore be looked upon as an American disease. Blastomycosis was a chronic infectious disease of the skin occurring between the ages of 20 and 60 years. It began as a papule, then forming a wartlike lesion, which gradually spread. It was superficial and painless and tended to heal, forming scars. The edge of the patches was well defined and raised, and contained many minute abscesses. The disease was auto-inoculable, for the patches were generally multiple. The blastomyces measured about 12 μ in diameter, it was double-contoured, and it contained no nucleus. In most cases there was no glandular enlargement and only two cases had proved fatal. Protozoic dermatitis resembled the blastomycetic dermatitis in many ways, but the organism increased in number by sporulation instead of by budding, and for this reason it had been thought that the organism was a protozoon, but there were so many points of resemblance between the two diseases that in all probability the two were produced by organisms which were closely allied.

The PRESIDENT (Dr. H. A. G. BROOKE of Manchester) said that he had derived much pleasure from the paper and demonstration and was proud that Professor Gilchrist was an *alumnus* of the Owens College.—A formal vote of thanks to Professor Gilchrist for his paper was moved by Mr. MALCOLM MORRIS (London), seconded by Dr. H. RADCLIFFE CROCKER (London), and carried unanimously.

A paper was communicated by Dr. J. H. SEQUEIRA (London) and Mr. H. BALEAN (London) on

Lupus Erythematosus.

It was based on the observation of 71 cases, of whom only 11 were males. The disease began early, eight cases commencing between 11 and 15 years of age. In 34 cases there was a family history of tuberculosis and two cases of lupus erythematosus occurred in one family. Tuberculosis was present in 18 cases. There was a history of scarlet fever in five cases. Two forms of the disease occurred, the discoid and the disseminated, but these varieties merged into one another. In 11 cases the disease commenced in multiple small foci. Local irritation appeared to be an exciting cause; for instance, one case developed after the application of a poultice. Out of 27 cases in which the urine had been examined albuminuria was present in seven, and it was especially frequent in the disseminated cases. The disease appeared to affect special vaso-motor areas. The authors concluded that lupus erythematosus was not bacterial in origin but was caused by a toxin circulating in the blood and acting on the capillary vessels. They thought that it was not possible to say that the toxin was the product of tuberculosis.

Dr. CROCKER mentioned that he had seen several cases of the disease in which albuminuria was present.

Professor GILCHRIST pointed out that they must not too readily conclude that a disease was due to a toxin because it was not possible to find a micro-organism in it. It had been shown that there were microbes sufficiently small to pass through porcelain filters.

Dr. GRAHAM LITTLE (London) thought that a great argument against lupus erythematosus being due to a toxin from tuberculosis was to be found in the fact that the disease was certainly rare in the Brompton Hospital for Consumption.

Dr. J. M. H. MACLEOD (London) read a paper on

The Histological Changes in the Skin after Light Treatment.

This paper was illustrated by some excellent diagrams. In all the cases examined the typical reaction had been present. The first change had been the occurrence of an œdema round the margin of the tubercle. This was followed by an œdematous destruction of the fibrous elements present and the plasma cells became vacuolated and the nuclei disappeared. The giant cells were attacked in the same way. An important point was that the cells showed a definite tendency to become elongated and to form fibres and thus lead to cicatrisation.

The section then visited the Manchester and Salford Hospital for Diseases of the Skin, where the President and Dr. G. H. Lancashire demonstrated the instruments employed and the mode of application. There were one large Finsen lamp for four patients, two small lamps, two apparatus for the production of x rays, and a high-frequency current apparatus. Many cases, chiefly lupus, were seen which had been under treatment. The installation was very complete and up to date.

FRIDAY, AUGUST 1ST.

At the commencement of the meeting the PRESIDENT referred to the great loss which dermatology had sustained in the recent death of Mr. W. Dale James of Sheffield who had borne many afflictions with great fortitude and resignation.

Psoriasis.

A discussion on psoriasis was introduced by Mr. MALCOLM MORRIS (London). He said that of psoriasis it might truly be said that its causation was unknown, its pathology was obscure, and its treatment was unsatisfactory. A convenient starting-point for a summary of the progress made in recent years presented itself in the discussion on psoriasis which took place at the annual meeting of the British Medical Association in 1893. On that occasion Dr. H. Radcliffe Crocker suggested that the disease might be the outcome of two factors, the primary lesion being vaso-motor in character and a parasite being a secondary but necessary agent. Mr. J. Peeke Richards, while medical officer of the Hanwell Lunatic Asylum, observed that psoriasis occurred much more frequently in cases of perverted nervous action, such as delusional insanity, than in cases of lessened nervous force, as dementia; while Dr. J. J. Pringle expressed himself in favour of the trophoneurotic theory of its origin. On the other hand, Dr. Norman Walker was inclined to think that it was parasitic. As to the treatment, the speakers expressed views almost equally divergent. Six years later the distinguished President, Dr. Brooke, in the most lucid and complete monograph on psoriasis that existed in their language, confessed that, "notwithstanding researches in every direction—social, statistical, chemical, microscopical, and bacteriological—the cause of psoriasis is still unknown" Reviewing the various opinions on the subject he grouped the hypotheses under three headings—namely, humoral, neuropathic, and microbic. It was obvious that there were serious objections to all three hypotheses taken singly. The humoral theory postulated that all sufferers from psoriasis were the subjects of gout, rheumatism, or some other dyscrasia, but clinical experience showed that this was true only of a small minority. The neuropathic theory also rested on a relatively slender foundation of facts, and the parasitic theory was also open to the objection that it had so far been impossible to fix the responsibility for the disease on any particular micro-organism, and attempts at artificial inoculation had failed. As to the pathology of psoriasis there was almost as much discrepancy of opinion as there was in regard to its causation and observers were not agreed even as to the primary lesions. All the more recent writers recognised that there were present (1) an increased production of epithelium; (2) an abnormality in the process of cornification of the epithelium; and (3) a dilatation of the blood-vessels. The most important recent contribution to the pathology of psoriasis had been by Dr. W. J. Munro. He believed that the earliest lesion was the formation of a small "dry" abscess at the surface of the horny layer and he looked upon the hyperkeratosis as a local defensive process against the abscess. These researches, however, threw no light on the origin of the disease. With regard to the pathological question generally it might be said that the opinions of dermatologists were at present pretty equally divided between the neuropathic and the parasitic theories. These theories were not mutually exclusive, for the two factors might coöperate. It was conceivable that the true explanation of the origin and nature of the disease was to be found

in a combination of causes, local and general. Thus, psoriasis might begin as a local response to irritation set up by the presence of a local agent or condition and constitutional disturbance caused by the production of toxins, and, lastly, nervous disorders might become developed as a consequence of profound toxæmia. He could not help thinking that if the primary etiological factor were a parasite it would not have eluded the persevering search that had been made for it in lesions so superficial as those of psoriasis. The development of psoriasis on the site of vaccination which had sometimes been noted, and of which he had himself seen several cases, might, in view of the acknowledged failure of inoculation experiments, be explained by the local irritation producing the condition of neuro-vascular disturbance necessary for the production of the specific toxin. If the poison were introduced with the vaccine lymph or into the wound afterwards vaccination would more often be the starting-point of psoriasis than it was. Heredity probably did play some part, if not in the actual genesis of the disease, at least in the production of a type of skin favourable for its development. The greater frequency of psoriasis in Europe, and especially northern Europe, compared with America seemed to show that climate had some etiological influence. It had long been taught by French dermatologists that there was a relation between osteo-arthritis and certain other joint affections and psoriasis. Mr. Morris had seen several cases in which joint affections existed concurrently with psoriasis. There were several types of psoriasis: (1) there was the simple uncomplicated form with occasional outbursts of activity seen in young persons without any sign of impaired health; (2) there was the acute rapidly spreading form associated with headache, asthma, and other nervous symptoms; (3) there was a form occurring in connexion with osteo-arthritis associated with severe constitutional disturbance; (4) there was psoriasis which passed into pityriasis rubra; and (5) there was a simple but atypical form which resembled seborrhœa. As a general rule no internal medication should be employed except in response to a definite constitutional indication. Arsenic was worse than useless in acute cases. When hyperæmia or active inflammation was present antimony was called for. As to local treatment, bactericides applied to the affected parts gave the best results. If there was no hyperæmia the most efficacious was unquestionably chrysarobin. Tar in the form of liquor carbonis and mercurial ointments of moderate strength were also serviceable. In severe forms associated with joint affections arsenic internally was useful. In one very severe case an exclusively meat diet, washed down by copious draughts of hot water, proved very effective. In the type of psoriasis in which there was a tendency to the development of pityriasis rubra all irritating remedies must be at once discontinued. Very weak preparations of tar were useful, and if the attack was severe the patient must be kept in bed. In psoriasis of the seborrhœic type the best application was sulphur. In slight cases of psoriasis complete destruction of the early lesions should be arrived at, and the best security against relapses was the complete removal of all remnants of the disease.

Dr. LESLIE ROBERTS (Liverpool) expressed the opinion that psoriasis was not microbic but due to a "poison." He drew attention to the great resemblance of its action to that of arsenic. He was inclined to think that the disease was associated with the abnormal action of some gland, probably the thyroid gland. The course of the disease was probably modified by seborrhœa. He had not much confidence in internal treatment, and of internal applications he considered chrysarobin to be the best. Inunction of simple ointments, continued for a long time after the apparent cure of the disease, prevented recurrence.

Mr. GEORGE PERNET (London) considered the disease to be parasitic. For all ordinary cases he employed the internal administration of salicin, which had been first advocated by Dr. Radcliffe Crocker. Arsenic was only to be employed in chronic and resistent forms. He had known a case treated by the exclusively meat diet which grew worse.

Dr. A. EDDOWES (London) looked upon the disease as microbic. He thought there were many drawbacks to the use of chrysarobin and he considered that painting the patches with liquor carbonis detergens was the most effective local treatment.

Professor GILCHRIST had examined many early lesions of psoriasis but he had never seen "dry" abscesses in the horny layer. He had seen much benefit from the administration of 40 grains of potassium iodide three times a day. Salicylic acid was a very effective local application. Treatment should be continued for from 12 to 18 months after apparent cure.

Dr. ARTHUR WHITFIELD (London) had found nothing characteristic in the histology of psoriasis. He did not believe in "dry" abscesses, for leucocytes could not wander in a dry substance. These so-called "dry" abscesses occurred in lichen planus and other scaly lesions. He did not say that the disease was parasitic, but the great tendency to recur if any patches were left uncured was a distinct point in favour of a microbic origin.

Mr. WILLMOTT EVANS (London) wished to endorse what Mr. Pernet had said as to the great value of Dr. Crocker's treatment by salicin. All the members of the salicylic acid group were useful, but salicin was probably the best. For persistent patches of psoriasis he thought the best application was an ointment of chrysarobin 50 per cent., with 25 per cent. of salicylic acid; of course, this should only be applied over a small area.

Dr. NORMAN WALKER (Edinburgh) said that he had seen good results from the administration of extract of thyroid gland in combination with arsenic.

The PRESIDENT said that the variety of opinions as to the cause of psoriasis reminded him of the theories of the etiology of phthisis before the discovery of the tubercle bacillus.

Seborrhœa.

Dr. NORMAN WALKER read a paper on the above subject. He pointed out that there was a want of agreement as to what was meant by seborrhœa, some confining the term to the dry form and some to seborrhœa oleosa. He thought that in this country the name was chiefly used for the dry form and that when it was intended to speak of the oily variety the adjective "oleosa" was appended. The scales in seborrhœa were not dried secretion but were derived from the epidermis. It must be recognised that the sweat glands secreted a "fatty" fluid. With regard to seborrhœa corporis he thought that its relation to seborrhœa capitis might be very aptly compared to the relation subsisting between tinea capitis and tinea circinata. For instance, while on the body a tinea might form a definite inflammatory ring, on the scalp it formed dry scales. The amount of dermatitis present in seborrhœa varied greatly. Was seborrhœa oleosa the same disease as seborrhœa sicca? It was very difficult to speak with certainty. It seemed certain that with the oily form baldness was not so common, but the hair tended to turn grey.

The PRESIDENT said that it was generally agreed that seborrhœa was certainly microbic in origin and that fact gave them a definite basis from which to start.

Dr. T. COLCOTT FOX (London) thought that Sabouraud had done great service in this matter and that endless confusion would arise unless they distinguished the oily from the dry form. In the oily form the oil could be definitely seen to exude from the pilo-sebaceous orifices.

Dr. LESLIE ROBERTS pointed out that fat was excreted by the skin in two ways. In the case of the sweat glands it was a pure secretion, but in the case of the sebaceous glands it was an exfolistion. He thought that "oleorrhœa" would be a useful term for excessive fatty secretion from the skin.

Professor GILCHRIST referred to some researches of his on a bacillus in acne vulgaris and its relation to Sabouraud's bacillus.

Dr. WHITFIELD pointed out that the patulous glands on the nose were not necessarily the openings of hair follicles only and he considered that they might be looked upon as cloacal apertures of hair follicles, sebaceous glands, and sweat glands.

Mr. PERNET read a paper on

The Tumours of Xeroderma Pigmentosum.

The case was sent to Dr. Crocker at University College Hospital in September, 1901. The child was eight years old and had been first deeply freckled in 1895. The condition had been steadily getting worse and the face was the part most affected, being the seat of a general desquamating dermatitis and thickly studded with pigmentary macules. On the face there were two growths, a small one just below the left lower eyelid and a large flattened sessile mass between the eyes, of about the size of half-a-crown; its surface was irregular and crusted. The growths were removed in the country and the larger one was examined. Masses of epithelial cells pervaded the corium but no connexion could be traced between these cells and the surface

epithelium. There were indications favourable to the idea that the new growth was derived from hair follicles. Mr. Pernet referred to other descriptions of tumours occurring in xeroderma pigmentosum.

INDUSTRIAL HYGIENE AND DISEASES OF OCCUPATION.

THURSDAY, JULY 31ST.

Dr. C. A. GREAVES (Derby) read a paper opening a discussion on

The Granting of Certificates of Fitness to Children and Young Persons employed in Factories and Workshops.

He stated that he considered that it would be superfluous to demonstrate the propriety of the policy of medical certification but for the probability that outsiders might note the proceedings of the section and the fact that in 1891 an attempt to abolish certifying originated chiefly in Lancashire. He said that he would therefore note briefly the grounds on which this limitation of free trade in labour rested as a preventive of injury to urban workers. Adverting shortly to the course of factory legislation, from the Apprentices' Act, to the comprehensive enactment of 1901 and the important part played by Lord Shaftesbury in the reform of a system under which children even at the age of five years could, prior to this legislation be subjected to industrial slavery, he said that it was something of a shock to him to recall that in 1868 (when he entered on the certifying function) children of the age of eight years could work half-time in mills. Since then the hours had been shortened, the ages raised, the work regulated, and education enforced, while the half-time system was almost obsolete. Parents and public opinion were more enlightened, but if inspection was withdrawn the helpless would still go to the wall. The importance of medical knowlege was formerly recognised by the appointment of Dr. Robert Baker with Mr. Alexander Redgrave as conjoint chief inspectors of factories, and then after an interval of lay superintendence the selection of Dr. B. A. Whitelegge opened a new vista to preventive medicine. Why, then, was medical inspection essential for the protection of the workers? It was impossible for the present staff of inspectors, with their many duties and wide districts, to give adequate supervision to the multitude of young hands—their visits were necessarily rare, while those of the medical man were frequent. The objects of requiring certificates might be classified as (1) avoidance of injury to the individual as to health, growth, or bodily capacity; (2) protection of the fellow workers of whatever age or sex; (3) preserving legality and thus protecting the employer; and (4) checking unfair competition and so protecting the conscientious from the unscrupulous manufacturer. The protection of the individual on the one hand and the fellow workers on the other could not be secured without medical knowledge and judgment. In considering reasons for refusal of certificate the nature of the work was always considered, and it was satisfactory to note that the Act of 1901 allowed the certificate to be qualified by conditions as to the work and gave the surgeon power to inspect the processes. Amongst the grounds for rejection that might be specified debility, malnutrition, deformity, rickets, joint disease, spinal curvature, sore eyelids, and distance from home chiefly concerned the young person examined; abscesses, ulcers, bone sinuses, scrofula, phthisis, ophthalmia, bad sight, deafness, and imbecility might also involve injury to the fellow workers, while the fellow workers were also in view in the case of eruptive fevers, scarlatinal desquamation, mumps, whooping-cough, vermin and dirt, ringworm and other skin diseases, and non-vaccination. When in 1891 the opponents of the medical examination alleged that there were few rejections recorded he (Dr. Greaves) made a return of 2000 in 23 years in Derby alone. Their frequency had diminished but it was undoubtedly still necessary to safeguard the helpless in the struggle for wealth. Referring to the desirability of requiring certification in workshops, he remarked that the absence of steam or other mechanical power was an inconclusive index of healthy employment and the Secretary of State had power to require medical examination in any class of workshops. Section 65, a permissive clause allowing workshop owners to obtain medical certificates "if they think fit," was a dead letter as it involved some pecuniary outlay. The question as to the practicability of fixing a standard of physical fitness for work must be answered in the negative; neither height, weight, nor muscular strength would be satisfactory; and different employment would require different standards. Fitness for specified work could only be properly decided by an examiner with medical knowledge and experience, an independent position, and moderate sagacity. In conclusion, Dr. Greaves entered an energetic protest against the statutory provision which in certain cases enabled the employer to demand a certificate of fitness from the medical man at his own consulting-room and to tender 6*d.* as a fee for this medical service

Professor C. J. WRIGHT (Leeds) said that he looked for an extension of the use of certifying surgeons. In Leeds he saw hardly anything of half-time labour. The raising of the age limit had been very beneficial, not only as regarded half-timers, but also as regarded young persons under 14 years of age. He looked on the preventive aspect of the Act as the most useful. He asked whether it was for the public good that a certifying surgeon should receive such poor remuneration for making his examination.

Dr. A. CAMPBELL (Dundee) contributed a paper with special reference to the system of half-time employment. Referring to the recent legislative changes under which a young person could work full time at 13 years of age after having procured an exemption certificate from the school board, Dr. Campbell said that his experience was that however popular this change in the law might be it was not favourable to the health of either the children or the young persons. He thought that if by an Act of Parliament all young persons and children could be kept at school till they attained 15 years of age much might be said in its favour. Most educationists, and especially those who had had experience of both systems, agreed that the half-day system was the better and more natural one. From personal experience and careful watching during many years he was convinced that children improved steadily in their health and strength under the half-time system. By admitting them into half-time they were taken away from the long hours in the day school which were probably the chief cause of their white faces and wearied looks, and it insured their being regularly fed and gave them sufficient time for play. The diminution in the number of half-timers in recent years could be accounted for by the way in which they had been treated. In schools they were looked upon as of a different caste and sympathised with and the system was spoken against by a sentimental public who had not taken the trouble to inquire into the whole bearing of the case. The great value of the certificates of fitness as given by certifying surgeons after professional and personal examination as to health and fitness, and the power and influence which had been exercised in safeguarding the young persons and children from being worked in factories when unfit, had long been satisfactorily proved. This certification being so necessary in factories it was in many respects more so in certain classes of workshops, and so long as certifying surgeons had not the same power conferred upon them of examining young persons and children employed in workshops as they had those employed in factories only a portion of the young persons and children were being cared for and protected as they ought to be.

Dr. J. HOLMES (Radcliffe) agreed that the extension of the system of examining children was advisable.

Dr. T. F. YOUNG (Bootle), Mr. C. W. THORP (Todmorden), and Mr. H. HAMMOND SMITH (Uxbridge) also joined in the discussion.

FRIDAY, AUGUST 1ST.

Dr. JAMES NIVEN (Manchester), in opening a discussion on

The Relation of Phthisis to Factory and Workshop Conditions,

said that a study of the supplement to the Fifty-fifth Annual Report of the Registrar General revealed that in 19 out of 44 counties, two of the 19 being coal mining counties and the rest chiefly agricultural, the death-rate for females exceeded that for males. This was the relation which would be expected were infection chiefly to occur in the house. In nearly every large town the death-rate from phthisis for males exceeded that for females—in many considerably. When the occupational death-rate from phthisis for males was analysed by using the figures given by Dr. Tatham in his Analysis of Occupational Death-rates, Part II. of the above-mentioned Supplement, it was perceived that the high occupational death-rate from phthisis for males in large towns was due to a variety of causes, amongst which the habits of particular classes as regarded intemperance and their circumstances and place of abode were the most considerable. The very great influence of the circumstances and places of abode was well illustrated by

the three main statistical divisions of Manchester. These factors also entered largely into the relations of phthisis to factories and workshops. There were also many occupations in which the work itself was adequate to produce a high death-rate from phthisis, but the occupation might be only partly causal. A predisposition might be produced at the workshops or the infection might take place in the home, in the public-house, or in some social place of resort. The measures needed were multiform, but it was requisite to consider only the more important. 1. Compulsory notification of all cases of tuberculous phthisis was required, so that every operative might be instructed in the precautions needed to protect his fellow workmen, and assisted to carry them out efficiently. Voluntary notification was almost equally useful, however, in the poorer parts of the city. 2. All spitting in workshops should be prohibited. This was easier to state than to effect, but with a great effort it might be managed. The first thing was to bring home to masters and operatives the vital necessity for this measure. Men requiring to spit should carry a pocket spittoon. 3. Increased efforts should be made to secure systematic wet sweeping, as far as possible daily, in workrooms. The dry sweeping usually practised was liable to do much harm if spitting went on. It would be an additional safeguard if the rooms were dredged with a disinfectant, as in the case of wool-sorters, under the special regulations. As regarded the lighting of workrooms, it was essential that there should be sufficient light by which to see to cleanse the workrooms in all parts, though more than that would be beneficial. If lighting must be artificial either electricity should be used or gas. If gas was used it should be regarded as essential to have intensified lights in which complete combustion was the case, with reflecting shades and tubes connected so as to carry off the waste gases and aid ventilation. It must be carefully considered what was aimed at by ventilating appliances. In schools clearly it was the removal of respiratory impurities, but in workshops it was very often a question whether the removal of dust was not the more important object. It was not easy to see how to deal with the more generally diffused dusts in carding rooms, iron turning, marine stores, and so forth. Various ideas presented themselves, such as supplying fresh air to the operatives by special tubes and ventilation on the plenum system with removal of the dust-laden atmosphere from below, but these did not appear at present to be within the domain of practical politics. It was essential that public-houses should be placed under strict legislation in respect of cleanliness and that spitting in public-houses should be prohibited. It was partly in the workship, but to a much larger extent in public-houses, that the inhabitants of common lodging-houses propagated amongst the industrial classes tuberculous phthisis which made such ravages amongst them. Hospital provision was needed at the expense of the rates for the removal of consumptives from crowded homes. But in regard to phthisis directly arising in the course of work he was satisfied that, having regard to occupations generally, the two most urgent requirements were the suppression of spitting and the maintenance of strict cleanliness, the workrooms being wet-swept.

Dr. G. C. MCLEARY (Manchester) contributed some remarks on the prevalence of phthisis amongst laundry workers. He said that the conditions of employment were subject to imperfect legislative regulations. The work was often carried on far into the night, Sunday work was not prohibited, and persons below 16 years of age might be employed without the certificate of fitness for employment without which no such person might work in a factory. The habit of intemperance which was unfortunately common amongst laundresses also weakened the resistance of the tissues to the attack of the tubercle bacillus. Finally, there was the risk of infection in the sorting-room. Phthisis as a disease of comparatively frequent occurrence amongst laundresses was not easy to prove inductively. The death-registers were of no avail, as it was a common practice in registering the death of a female to mention the occupation, not of the deceased, but of her father or husband. This practice was much to be deplored and it was to be hoped that the Registrar-General would take steps to institute a system of death registration which would enable statistics to supplement the valuable information already possessed with regard to male occupational mortality by information which would be of almost equal value concerning diseases of occupation in females.

Dr. ARTHUR RANSOME (Bournemouth) agreed with Dr. Niven that the public-house was a great factor in the spread of consumption, though he would also include theatres and music halls and possibly places of worship.

Dr. W. M. ROBERTSHAW (Stocksbridge) contributed a paper on Ganister Miners' Disease. In discussing this subject he said that it was well to say something about ganister itself. In certain manufacturing processes, and especially in those connected with certain Sheffield trades, a heat-resisting substance was required which would stand very high temperatures. Such a substance was ganister, a hard, close-grained mineral, consisting mainly of silica, which it contained to the extent of 95 per cent. Ganister occurs principally in the South of Yorkshire and more particularly in that part of the Don watershed between Penistone and Sheffield, where it is associated with the lower coal seams. In the mining, preparing and manufacturing of this mineral the disease which had been called "ganister miners' disease" or "ganister disease" was produced. For many years the disease in the Stocksbridge urban district passed unnoticed, but the number of deaths occurring amongst the miners at the ganister works drew attention to the condition. Ganister being extremely hard it was impossible to mine it with the pick. It was therefore blasted with dynamite. On being brought to the surface it was crushed in "breakers," and then ground into a powder, in which state it was used for lining Bessemer converters, making bricks, &c. Two main sets of workmen were affected by the dust—the miner who got the mineral and the surface workman who prepared it and manufactured it into bricks, &c. In the mining process a hole was first drilled in which the dynamite was placed. The workmen having retired the dynamite was fired by time fuse and percussion cap. Dust which consisted of particles of ganister was produced in boring the hole, and when the shot was fired the whole was disturbed and the place reeked of it. Dust was produced by the breakers and grinders and in that way surface workmen became affected. There had been, and still was, a great difference in the certifying of deaths of workers in this industry: while the majority of practitioners certified the cause of death as phthisis a few had been more correct and had used the terms "fibroid phthisis," "pneumonokoniosis," or "ganister miners' disease." This was important, because unless it was taken into consideration many deaths really due to this condition might be overlooked. With regard to the relation of the disease to tuberculous disease Dr. Robertshaw was of opinion that the cases might be best classed under three heads: (1) those in which after the fibroid change had damaged the lungs true tuberculous phthisis played the chief part; (2) those in which tubercle was found but which was only very secondary to the fibroid disease; and (3) those in which there was no tubercle at all, the disease being entirely due to the fibroid change brought about by the ganister dust. The majority of cases were found in the last two classes. The following suggestions were likely to do a good deal towards stamping out this scourge. No miner should go into the workings for half an hour after the blasting shot had been fired. A limit should be put on the length of time during which a man was permitted to work at any of the dangerous branches of the ganister industry and such improved conditions (such as better ventilation) as obtained at present should be continued and extended.

Dr. T. WATTS (Hyde), speaking on shuttle threading as a source of infection in phthisis, said that it constituted one—if not the greatest—of the dangers of the cotton manufacturing process. The method at present in vogue amongst weavers of threading shuttles in looms consisted in what was popularly known as sucking up the weft, which was carried out as follows. When the shuttle ran empty the weaver put a new cop in and the free end of the weft was then drawn through the eye of the shuttle by suction, the shuttle being placed between the weaver's lips for the purpose, and by means of a forced inspiration this weft was drawn through the eye and, unfortunately, whatever else was in the shuttle was drawn into the mouth and respiratory passages. When it was remembered that a weaver in charge of three looms—which was most usual—performed this little operation on an average once for each loom every five minutes, which worked out at 36 times an hour, or 360 times during a working day of 10 hours, it would readily be seen that any injurious effect, however slight, was very much

increased by the number of times that it was repeated. If a shuttle taken from a working loom were examined, in the cavity of the shuttle, especially about the eyelet, there would be found a quantity of dust and this on examination would be found to consist of "size" and cotton fibres. A weaver nearly always used the same looms and consequently the same shuttles, but a weaver suffering from incipient phthisis had frequent break-downs and was away from her work, at which times her looms were taken charge of by others whom in this way she might infect. What had been said with regard to tubercle applied also to syphilis, diphtheria, lupus, &c., but it was in the risk of tubercle infection that the greatest danger lay. His attention had lately been drawn to a simple and effective means of threading a shuttle by means of an indiarubber pump which could be worn secured to the bodice by means of a safety-pin. This simple little instrument did away entirely with the objectionable and unhealthy method at present in vogue. He had found it difficult to get the older weavers to use it, but children and young persons took readily to it, and every child or young person when first commencing work in a weaving shed ought to be warned by the certifying surgeon at the time of his examination of the dangers of drawing the weft through by means of the mouth and to be trained from the first to some other method of threading the shuttle.

ETHICS.

FRIDAY, AUGUST 1ST.

Sir VICTOR HORSLEY (London) opened a debate on

The Organisation of the Profession

and advocated the establishment of a political bureau. There was, he regretted to say, a distinct feeling that medical men had nothing to do with politics, yet it was evident that legislators had a great deal to do with medical men. Indeed, every member of the profession was a servant of the State. Therefore, it was necessary that the profession should watch and seek to influence legislation where their interests were concerned. The British Medical Association had, it was true, appointed a Parliamentary Bills Committee, the members being selected by the branches. It became a watching committee which criticised but did nothing effective. The late Mr. Ernest Hart did a good deal of work personally by interviewing Members of Parliament. The old constitution of the Association appeared to provide for political action, but in reality it only relied on the generosity of the editor of its journal who had to devote his time gratuitously so as to save the situation. The new constitution made better provision. There was to be a Medico-political Committee which was to study prospective legislation and to report thereon to the meeting of representatives, and the latter would determine what should be the policy of the Association. Ideas and suggestions would come in from the divisions and be approved or rejected by the profession as a whole. But it was further necessary to secure that these views when once ascertained should be heard in Parliament and impressed upon the Government. When this was done systematically the Government would no longer treat the profession with contempt. At present the profession was not properly represented in the House of Commons by the medical members.

Dr. DAWSON WILLIAMS (London) having been called upon to speak said that the question raised was really very urgent. Formerly medico-political work had been done in a very casual manner and this by persons who had many other duties to perform. This was notably the case in regard to his predecessor, Mr. Ernest Hart. Now, Sir Victor Horsley was doing this work, studying the likely effect of Bills, &c. This should be done by others and then submitted to him. There were three stages in legislation which should be watched by some person especially appointed for that purpose who would be able to keep all the threads in hand and be familiar with every stage of the legislation. They had to decide first what they did want and, secondly, what they did not want. It was necessary to note and to ascertain the feeling within the ranks of the profession and then to watch and sometimes to counteract the agitations outside the profession. Thirdly, the need of action did not cease when a law had been enacted. It was no easy matter to understand the effect of a new law. Under every law the methods of its application had to be carefully watched and amendments were often necessary. There must be an authorised embodiment of the opinions of the profession to suggest such amendments to orders under the law.

Dr. REDMOND protested that medical practitioners could not take political action, for they had good patients in both camps. What was wanted was something like the Incorporated Law Society which would fix a minimum fee and thus enable the young practitioner to earn a living wage.

Dr. MAJOR GREENWOOD (London) protested that the object in hand would not be promoted by abusing the medical men who were in Parliament.

Sir VICTOR HORSLEY explained that he had not said "all" the medical Members of Parliament.

Mr. R. H. WOLSTENHOLME (Salford) expressed some anxiety lest the political official should become the leader instead of the representative of the profession. He thought that medical men should take a full part in public life and do their duty to the community. Political practitioners were the best of canvassers and if there were more of them they would have greater influence over the legislature.

Mr. E. H. T. NASH (Accrington) explained how medical practitioners could influence their local Member of Parliament and how in some instances they had done so. Mr. Whittaker had now abandoned a large practice so as to become an organiser for the Association. He would do what was necessary. The Association was wealthy and could pay sufficient to have this well done.

Mr. JOHN WALLACE pointed out that Mr. Whitaker would not engineer anything but would carry out instructions and put forward the views of the whole profession. They would have to forget their party views where the interests of the profession were concerned.

The PRESIDENT (Dr. S. WOODCOCK of Manchester) here rose to explain that the appointment of Mr. Whitaker was but temporary and only an experiment, which, however, he hoped would prove successful and permanent. The late Sir Frank Lockwood had said to him: "You doctors are a surprising lot of fellows. Why do you not unite and agree as to what you want? With more than 20,000 men spread over the whole country and exercising great power you could get all you want. Look at the trades unions; they dictate terms."

Mr. J. S. WHITAKER (Great Yarmouth) pointed out that each division would deal with local matters and report as to how they were affected by Imperial legislation. The public were bewildered; they wanted to know but could not ascertain what were the opinions of the profession. There must be a double movement—from the circumference to the centre and from the centre to the circumference. What came from a division must be reported by the council to all the divisions and thus the opinion of the whole Association should be known. The duty of the organiser was not to initiate but to reflect the prevailing opinion. Then there was the question of the relations of medical men to the political parties. Were they to follow the Irish plan of supporting either party? This was also the principle on which the liquor trade had acted. He hoped that medical men would not say that their profession was their politics. They could preserve their own opinions on general political questions, but questions effecting the profession affected the general public. They opposed the Midwives Bill in the interests of the community. The advocates of temperance sometimes put temperance before party and sometimes party before temperance. There was much that could be done by persuasion and by the accumulation and classification of facts.

Mrs. E. GARRETT ANDERSON (London) thought that the future did not depend on organisation, though it was a good thing. The East Anglian branch of the British Medical Association had discussed the Midwives Bill, appointed deputations, and had usefully brought their influence to bear. If all the other branches of the Association had done the same the result would have been very different.

Sir VICTOR HORSLEY, in reply, thanked Dr. Dawson Williams for his lucid explanation of the difficulties to be faced in carrying on effective medico-political work. He hoped that Dr. Redmond would bring a schedule of fees to the representative meeting at Swansea next year so that they might do what the lawyers had done. Dr. Greenwood laboured under a misapprehension. The speaker had not meant that medical men should conspire with a medical party; but he did

raise as a question of principle the manner in which they should deal with Members of Parliament and urged that it was necessary to mention their names if it was desired to influence them. It was very well to talk of conciliation; in reality it meant full surrender. Members of Parliament had their own axes to grind. They would not listen to representations that were not backed by force. It was not possible to conciliate, it was only possible to frighten. Mr. Nash and others had shown what could be done locally and it would be the duty of the divisions to educate their Members of Parliament. Then there was the question as to how far the new constitution converted the British Medical Association into a trade union. There was, however, one vital difference. The trade unions only took in hand the wages question. The medical profession had always taken into consideration ethical conduct. If a member disgraced himself he was arraigned. The medical profession also worked more for the general public than the trade unions. But in regard to united action and mutual help and support he hoped that the members of the profession would imitate the trade unions.

Dr. E. JEPSON (Durham) read a short paper on

How to Form a Medical Union.

He gave a history of the County of Durham Medical Union[1] and insisted that the leaders should make visiting tours, and that there should be well-defined punitive measures. In the north they were studying how to establish a minimum fee and how to do away with contract work altogether.

Dr. J. H. HUNTER (South Shields) read a paper on the same subject and urged that the cost of qualification entitled the practitioner to a competent livelihood and yet many failed to secure enough to provide for themselves and families. This was not due to improvidence or to the overcrowding of the profession but to sweating of medical men. After quoting THE LANCET Special Commissioner's reports to show that practitioners received but from 2*d.* to 4*d.* per consultation he urged that organisation was imperatively needed. The resident medical officer of the local hospital might often be useful as a neutral organiser. Local practitioners should meet privately, tabulate their grievances, canvass the profession, and when the majority had agreed to form a union then a public meeting should be convoked and the organisation formally constituted. Those who remained outside would join in time. By following trade-union tactics they were doing nothing derogatory to their dignity; on the contrary, it was the only practical means of defending the dignity of the profession.

Dr. ALFRED COX (Gateshead) raised the very important question as to what was going to become of the medical unions, for they had acquired some vested interests which they might not feel inclined to abandon so as to become divisions of the newly constituted British Medical Association. These unions would have to appeal to such of their members who were not also members of the British Medical Association to join the latter body and to pay 25*s.* a year. The speaker thought that all local and special organisations should be sunk in favour of the one great Association. Yet some of these smaller bodies would die hard. They had, nevertheless, nothing to lose. There was no reason why the South Shields Medical Union, which had already abandoned its local independence so as to become a branch of the County of Durham Medical Union, should not now become a division of the British Medical Association.

Dr. T. LAFFAN (Cashel) complained that there were still back-door entrances to the profession which should be closed so as to prevent overcrowding.

Surgeon-Major G. K. POOLE (late I.M.S.) thought that the profession was in a lamentable position and that medical men were all pulling against each other. There were only about 150 medical men who attended the two recent meetings of the profession held in London.

Dr. R. E. HOWELL (Middlesbrough) thought that if the profession was not yet well organised the spirit of union was among them. But for the medical union in his town he could not run the risk of absenting himself; now, however, competition was replaced by coöperation.

Mr. WOLSTENHOLME (Salford) was also concerned as to what would befall the local organisation in face of the new constitution. They had been asked to commit suicide. But there was enough work for them to do outside the ranks of the British Medical Association. Nor need they fear the expense. In Manchester their medical guild had a quarterly journal, and for the sake of the profits that that paper brought in the publishers had offered to pay all the working expenses of their guild.

Mr. G. H. BROADBENT (Manchester) replied that this offer should make them suspicious and showed that the guild had better do its own work. He did not agree with Dr. Cox and was strongly of opinion that the local medical unions or guilds should be kept in existence. The other and vast scheme would take a long time to grow and then it was not at all certain that it would do the work for which the medical unions had been founded. There had never been much cohesion in the British Medical Association. The guilds and the unions alone had achieved tangible results. They had promoted unity and cohesion and must continue their good work and not abandon a reality for what as yet was but a scheme.

Mr. NASH remarked that some of the unions had money in their banks, where it had accumulated to provide means for taking legal action against quacks and for other purposes. They had got rid of several quacks with the aid of these funds and he did not believe that the British Medical Association was going to do this work for them, therefore he was opposed to the policy of suicide.

Dr. S. CRAWSHAW (Ashton-under-Lyne) thought that the existing organisations could continue as at present and that it would only be necessary to change their name. The only point was that their rules would have to be submitted to the Council of the British Medical Association, but he saw no reason why these rules should not be approved by the Council.

Dr. JEPSON thought that each union would have to decide for itself whether it would join the British Medical Association, and he believed that in the course of time the unions would for the most part do so.

Dr. HUDSON did not think that they were killing local organisations but only altering their names.

The PRESIDENT now rose to announce that it was time to close the debate, saying that the questions raised could not be settled till more experience had been acquired.

The Vaccination Question.

Barely an hour remained before the time of final adjournment and during that short period an attempt was made to discuss the question of the application of the vaccination laws.

Mr. R. F. TOMLIN (London) read a paper dealing to some extent with the quality of the lymph and the nature of the marks.

Mr. DAVID OWEN (Manchester) urged that parents should be able to select any practitioner to vaccinate their children and that the cost should be defrayed by the State as in the case of public vaccinators.

This led to a somewhat animated debate between public vaccinators and private practitioners, but the remaining hour elapsed before any decision could be arrived at beyond the adoption of a resolution to the effect—

That in the opinion of this section no alteration in the Vaccination Acts will be satisfactory which does not provide a standard of efficiency for all practitioners alike.

Other proposals were brought forward, but the PRESIDENT declared that there was not time to take them into consideration and accordingly left the chair. This gave rise to some protests and the section broke up in confusion.

NAVY, ARMY, AND AMBULANCE.

THURSDAY, JULY 31ST.

Inspector-General A. TURNBULL, R.N., retired (London), opened the proceedings of this section by a paper entitled

The Prevention of Scurvy.

He said that the absence of scurvy from Nansen's expedition had not received the recognition to which it was entitled. The British Arctic Expedition of 1875 failed as the result of scurvy on board the *Discovery* and *Alert*, though every precaution thought necessary at that time was taken to prevent scurvy. Osler had stated that the etiology of scurvy was still undecided. Osler gave three suggested causes for the disease: (1) the absence of vegetables or ingredients supplied by vegetables; (2) the presence of some toxic material present in the food; and (3) the presence of some organism in the food. The speaker thought that the evidence was overwhelming that the

[1] We have already published this history, see THE LANCET, March 9th (p. 740) and 16th (p. 819), 1901.

disease arose from a lack of some essential element and not from food allowed to become tainted. He went on to say that, judging from extensive researches, the exciting cause was some toxic material in the food and that lime-juice, though an unquestioned remedy, was not a preventive and was erroneously so supposed. The present absence of scurvy from the navy was due to the changed and varied dietary. The late Dr. Curnow and Dr. Johnston attributed the lessening of scurvy at the *Dreadnought* Hospital to (1) the Merchant Shipping Act, 1867; (2) the increase of steamships; and (3) the decline of sailing vessels. Scurvy they found was limited to the ordinary seamen of sailing ships, particularly of the East Indian trade, and was essentially a disease of the forecastle. Patients were admitted who had regularly taken lime-juice. This showed that lime-juice was an adjuvant to the prevention of, and not an absolute deterrent to, scurvy. Nansen, under the advice of Professor Torup of Christiania, had established a proper anti-scorbutic diet. And yet Nansen and Johannsen, after great hardships and privations, living on their rifles, arrived home in robust health. This was due to the fresh meat food which they procured. The crew of the *Fram* had little fresh meat and no lime-juice yet did not get scurvy. The speaker quoted the Jackson-Harmsworth expedition which trusted to sound provisions and escaped scurvy, and the *Windward* which trusted to lime-juice had to contend with scurvy. He then touched on the cost of lime-juice to the Royal Navy in 1900 (£1500) and mentioned the theory of sterilised milk foods causing scurvy-rickets as being refuted by Ransom, Holt, and Cautley. Antiseptic surgery was purity; true anti-scorbutic measures meant pure food.

The PRESIDENT (Brigade-Surgeon-Lieutenant-Colonel G. S. ELLISTON) thanked Inspector-General Turnbull for his interesting paper and its very valuable details and hoped that in the Royal Navy scurvy was an extinct disease. Improved feeding and ventilation had no doubt much to do with the improvement.

Fleet-Surgeon G. KIRKER said that he had not had much experience of scurvy except when a student. He did not agree that it was due to decomposed food and thought it was due to the absence of fresh animal and vegetable food. The Nansen expedition depended on their rifles for the most part and had no scurvy, principally because of the fresh food thus provided. In treating scurvy Coppinger depended more on fresh meat than on lime-juice.

Surgeon-Major G. A. HUTTON said that the captains of ships might be allowed to alter the diets as a remedy against scurvy. It was, of course, a serious question, as it would be difficult to bring about a change from a regular diet. It was doubtful even whether such a responsibility should be placed on the commander. The short voyages of the present day and the easy obtaining of fresh provisions were great preventives. In his first voyage from Plymouth to Cape Town the vessel took 65 days; in these times it took only a fortnight.

Inspector-General TURNBULL, in reply, said that Fleet-Surgeon Kirker agreed with his plea for fresh and pure food. The American navy did not issue lime-juice. In the Nares expedition the people were better provisioned and the officers took port wine. The pemmican was very unappetising. He was not wedded to the ptomaine theory but advocated pure fresh food. In the case of dietary he had given evidence before the Admiralty Committee and had suggested a dietary for war service which would be useful in times of scarcity.

Surgeon-Major HUTTON read a paper entitled

Voluntary Aid to the Sick and Wounded in War, with Special Reference to Hospital Orderlies.

He quoted Sir John Furley, the Chief Commissioner of the Red Cross Society in South Africa, who said, "In no army can the medical department be made equal to the exigencies of a great war without supplementary aid from voluntary societies, and no such societies can properly fulfil that duty without preparation and organisation in time of peace." The main object of his paper, as the title indicated, was the future supply of hospital orderlies. The St. John Ambulance Association had, during the South African war, furnished through its ambulance brigade upwards of 2000 men who had acted as orderlies in the various military hospitals at the seat of war and in the hospital ships, and excellent accounts had been received on all sides as to the way these men had done their arduous duties. 65 of these men had succumbed to disease contracted in the performance of their noble work, eight had been mentioned in despatches, and one had received the distinguished service medal. The question of the supply of efficient hospital orderlies was a pressing one. Sir Frederick Treves had said at the meeting of the British Medical Association at Ipswich that "the question of orderlies is a difficult one. The present campaign showed that nurses—keenly as their services were appreciated—could not work in the field hospitals and they must fall back on the orderly, and he was almost an impossible person. It was indeed, in fact, very difficult to know what his position was. He had to pitch tents, to dig trenches, and then to nurse complicated cases." It was almost an impossible position. Those who criticised the hospital orderly had no knowledge of the extreme difficulty of this subject. Where were they to be got? Besides the St. John Ambulance Association and Brigade another source of supply of hospital orderlies might be from the Volunteer Brigade Bearer Companies.

Colonel A. W. DUKE, R.A.M.C., said that the St. John Ambulance people in Africa were good fellows and most willing to learn and to work. It was most necessary for teaching officers to remember that these men should be brought into the hospitals. There should be two classes of army hospital orderly. From 5*s.* to 6*s.* a day should be given to the men who did the real nursing work and the other men could do the cleaning. The subject of the two classes of orderlies ought to be pressed upon the War Office.

Surgeon-General J. B. HAMILTON, retired, said that when he joined, any old soldier was used as hospital orderly. The Army Hospital Corps was gradually developed. At the beginning the men were under the military officers for discipline only. Eventually, after much trouble, they obtained command of their own men. At first they got good men but the military authorities took them and eventually they had to put up with men below the standard required. The two classes of orderly was a most important matter and should at once be seriously undertaken. The men should be tentatively employed until it was seen how they would turn out. It was as necessary for an orderly to have military instruction as it was for a soldier in the interests of discipline. He had succeeded in getting nurses registered for service in the War Office. Preparation in advance was the thing—not scramble after war had broken out.

Surgeon-Major G. H. DARWIN said that the St. John Ambulance men would be good men if they would only keep up their practical work; if they would do this they would be the best possible men. For the future the men would have to come from the Medical Staff Corps.

Dr. FORBES ROSS (London) said that, speaking as a civilian, it was nothing less than a miracle surpassing every other recorded that in spite of the material as regards orderlies which the Royal Army Medical Corps had to deal with they had done so magnificently in South Africa. Their organisation must have been superb and if their efficiency had not been good they could never have coped with their difficulties as they had done. There was an apparent need for a "nursing ward orderly" in all military hospitals. There ought to be a "dresser-sergeant," a "dresser corporal," and two "dresser privates" kept entirely and solely for dressing surgical cases and nursing medical cases. Surely a man of the clerk class could be taught antiseptic surgical dressing, just as were ordinary medical students, and set to help the surgeons when on active service and in hospital; 30*s.* a week and rations and allowances would procure the right class of man. His uniform should be different from the other orderlies of the Royal Army Medical Corps and he should not be permitted to do dirty jobs about camps. Government colonial hospitals were equipped with trained dressers and there was no reason why this could not be done at home.

Surgeon-Major POOLE thought that the idea of the two classes of orderly was an excellent one. The higher grade orderly should be drawn from the lower grade men. The need for male nurses was a great one and male nurses ought to be used largely.

Deputy Commissioner C. H. MILBURN (St. John Ambulance Brigade) said that the St. John Ambulance Brigade and the St. John Ambulance Association should be clearly distinguished. The brigade had done a great deal of the organisation for the war. The men ought to have hospital training. The first and second grade of orderly would come and was a most important and necessary matter. The civil organisation which had helped the army should have been

thanked by the Government. The St. John Ambulance people had not been thanked.

The PRESIDENT said here that the King had had the proper thanks conveyed and that was the main matter and the speaker cordially agreed.

Lieutenant-Colonel J. HYSLOP, D.S.O. (Natal), said that the matter of the civilian element was very pressing. The Royal Army Medical Corps administration was admirable. If the St. John Ambulance men had been trained in the same way as the Royal Army Medical Corps orderlies they would have been immeasurably superior, as they were drawn from a more intelligent class.

Assistant Commissioner J. S. GRIFFITHS said that he had tried to organise the St. John Ambulance Brigade in Bristol into a more military body and drilled them and found them most efficient.

Captain W. B. PRITCHARD, R.A.M.C. (Volunteers), thought that the Royal Army Medical Corps was a better training ground for orderlies than the St. John Ambulance for disciplinary reasons. As regards the ambulance work the St. John Ambulance Association was most efficient. The men ought to be trained in hospitals in the nursing part of their work. He thought that the Royal Army Medical Corps Volunteers had not been accorded proper recognition.

The PRESIDENT thought that the volunteer medical corps had gained a great distinction by its incorporation with the Royal Army Medical Corps. The St. John Ambulance Brigade had had some hospital training. They had most undoubtedly a great deal of discipline, for the ambulance men were required to attend annual drills and parades and if they did not they were turned out. Men in the bearer companies should be under their own officers who had trained them as far as possible and it was a grievance if that were not so.

Surgeon-Major HUTTON, in reply, said that army orderlies did their duties fairly well in the old days. It was gratifying that the St. John Ambulance men were found so good in South Africa. The object was to get good men to enlist in the Royal Army Medical Corps as orderlies. He was in the St. John ambulance work before the formation of the Brigade. The Association and the Brigade were inseparably connected and the greatest cordiality existed. With regard to the two classes of orderlies it was extremely desirable but presented certain difficulties. The large hospitals no doubt would be very glad to give any assistance in the hospital training of the St. John Ambulance Association.

Surgeon-General HAMILTON here read out the new suggestion of having representative members for the three services on the council—navy, army, and Indian medical services—and suggested that they should be retired members, as they could be the only people who could open their mouths freely. Their election could be effected by means of the *British Medical Journal*.

The meeting unanimously endorsed a resolution suggesting to the council of the Association that a small committee, consisting of Inspector-General Turnbull, Surgeon-General Hamilton, and Brigade-Surgeon-Lieutenant-Colonel Drake-Brockman, be formed to look into the necessary arrangements.

FRIDAY, AUGUST 1st.

Deputy Inspector-General JAMES PORTER, R.N., opened the proceedings by the contribution of a paper entitled

The Red Cross Badge.

He reviewed the question of the abuse of the red-cross flag in South Africa and stated that owing to long-range shooting and the difficulty of seeing the flag at long distances that it was to be expected that it would sometimes be fired on in mistake, and at most in future it must be regarded as indicating where help and medical aid could be obtained rather than as a protection to the wounded. He reviewed and recounted the numerous reported instances where the Boers in the late war made improper use of the red-cross flag and mentioned the various and numerous vehicles taken during the war which were adorned with the red cross but which had undoubtedly been used for other purposes. He pointed out that in naval work the red-cross flag might be taken for the admiral's badge and thus draw fire on a hospital ship. Some authoritative ruling should be obtained with regard to whether Government hospital ships were capturable as prizes of war. He finally summed up as follows: (1) the Geneva badge, whilst readily recognisable, should not be easily counterfeited or be confusable with any other badge or flag; (2) it should be issued under authority only, along with means of proving the identity of the holder; and (3) abuses of the badge should entail definite penalties, swift and severe.

Surgeon-General HAMILTON, retired, thought that wagons for the use of the sick ought to be painted white, and not khaki, as were those which were used for military purposes. He did not see how we could blame the enemy on a dull day for firing on a red-cross wagon painted khaki, as it was difficult to see the red cross.

Lieutenant-Colonel HYSLOP said that the individual wearing the red cross was absolutely unprotected, as at long range the cross could not be seen.

Surgeon-General HAMILTON read a paper entitled

Reform in the Army Medical Service.

He briefly reviewed the history of the difficulties experienced in attaining their present satisfactory position. The jealousies of the combatant branch which led to petty acts of irritation unworthy of so noble a body of men were caustically dealt with. He then alluded to the war in South Africa and commended the retired medical officers and civilians, and said that the civilians should have been given temporary commissions and uniforms as they were entitled to it; many of them lost their lives as the result of their services. This omission of commissions and uniforms was a great mistake on the part of the War Office. He strongly criticised the treatment of the late Director-General Jameson and stated that some recognition should undoubtedly have been given him. He reviewed the situation as altered by the new Warrant and commended the position awarded to the new Director-General. He thought that the Royal Army Medical Corps in India should have the same rate of pay and hospital allowances as at home. The social position accorded the *personnel* of the Royal Army Medical Corps should undergo improvement or it would injure the working of the new Warrant. His Majesty's honorary medical officers in the army were never asked to Court functions as were other officers of other branches.

Surgeon-Major G. A. HUTTON said that he could well understand Surgeon-General Hamilton's remarks. It was regrettable that when officers rose to the higher ranks they became merely clerks and lost their professional attainments as physicians and surgeons. He thought that junior officers should be more considerately treated by their seniors and this would bring about a sound *esprit de corps*, as it would encourage them to persevere.

Dr. FORBES ROSS said that from a purely civilian point of view it had always puzzled him why the army medical man seemed to be so much in doubt and so touchy as to his social position. Social status was mainly a personal matter; a gentleman was always a gentleman and remained so and would be treated as such whatever anyone else might decide, and no amount of official recognition would transform a cad into a gentleman. Medical men from their general and professional education were much better informed on many subjects than many soldiers, therefore it did not behove them as a profession to descend to petty jealousies. It behoved the members of the Royal Army Medical Corps to be loyal and considerate to one another—senior to junior and *vice versâ*—as professional brothers and then the other branches of the service would regard them differently.

Dr. G. H. DARWIN (Manchester) related an amusing episode in his volunteer mess to the effect that having been treated very uncivilly by some volunteer brother officers and an argument in consequence having arisen he had stated that he himself, the "doctor," the chaplain, and the veterinary surgeon were the only people present whose callings were real, the other gentlemen being only "shams," which greatly discomfited his opponents and eventually led to more courteous treatment of himself by the "sham" combatants.

The PRESIDENT said that Surgeon-General Jameson was badly treated as his advice at the beginning of the war was against the abolition of the sanitary officer and the result showed that he was right. The Queen Alexandra Nursing Corps was a good move, as enteric fever and pneumonia could not be nursed by ordinary orderlies.

Captain PRITCHARD thought that the age of joining the service should be raised and very young men should not be admitted as they had no experience. He thought that social position as a medical man was what was most desirable and he did not care very much for their opinion of himself as a soldier so long as he received that due to a professional man and a gentleman.

Surgeon-General HAMILTON, in reply, said that no doubt the social matter would right itself, but up till now many discourtesies had to be put up with which were very galling. He did not agree that the age of entry into the service should be raised, as the officer did not learn discipline and became imbued with the military spirit unless he began young. A man entering at 28 years of age had very little chance of promotion and as a result excellent men had to retire on account of age. The age should be not under 22 years and not over 26 years. The medical officer in the army was more than a medical man when on the battlefield.

Mr. C. ROBERTS, late civil surgeon in Government employ in South Africa, read a paper entitled

The Treatment of Abdominal Wounds in War.

He said that in discussing the treatment of abdominal wounds in war it was necessary to consider (1) the nature of the injury; (2) the cases in which operative interference was indicated; and (3) to what extent the prospect of success of abdominal operations was diminished by the difficulties inseparable from campaigning. When the wound was caused by a high velocity and mantled bullet of small calibre—as the Mauser and Lee-Metford—the extent of the visceral injury depended little, if at all, upon the range at which the bullet was fired, except in some instances in which the wound was complicated by injury to bone. At very long ranges, when the force was spent and in ricochet wounds, the bullet might be retained. The course it took within the abdomen was then lost and the internal injuries might be widespread and with difficulty made out. Where both wounds of entry and exit were present the track was always that of a straight line between these two points, and from anatomical knowledge one was able to say what viscera might have been injured. Transverse wounds were more fatal than those passing in an antero-posterior direction. Wounds above the umbilicus were more favourable than those below. Direct antero-posterior wounds in the small intestinal area were very unfavourable. Complete transverse wounds above the umbilicus were very unfavourable. That the small intestinal area might be crossed without perforation occurring had been demonstrated: 1. By examination after death. In the published record of the work of the Portland Hospital in South Africa written by the professional staff a case was described the details of which were supplied by Mr. G. L. Cheatle. Two perforations were found in the cæcum and sigmoid flexure of the colon, and though the bullet had undoubtedly crossed the area occupied by the small intestine no wound of the bowel had occurred. 2. By examination during laparotomy. Mr. Makins in his work on his surgical experiences in South Africa had given an account of an operation in which two linear rents were found in the jejunum, involving the peritoneal and muscular coats only. He had also noted in other instances linear ecchymoses and wounds of the peritoneal and muscular coats alone associated with complete perforations. The view that the intestine escaped perforation in many of the cases that recovered was supported by the fact that frequently so few abdominal symptoms were present. It was difficult to believe, however, that in all cases no perforation was present, for in many shock was severe and frequent vomiting persisted for two or three days, the temperature rose, and the abdomen became rigid and painful. These symptoms were readily attributable to the shock of perforation and slight local peritoneal infection. The post-mortem examination in Mr. Cheatle's case previously mentioned showed that no extravasation of fæces had occurred from a perforation of the cæcum and in cases operated upon no free escape of fæces had been found before manipulation. Sometimes the presence of melæna had furnished strong evidence of perforation. There was little doubt that a perforation might heal primarily or become shut off by adhesion to a neighbouring coil within a few hours. In considering the cases in which operative interference was required one must first exclude those wounded which would die in the first 24 hours from intra-peritoneal hæmorrhage or from the shock of extensive internal injuries and which were not amenable to surgical treatment. Their number was always considerable, probably from 20 per cent. to 30 per cent. of those wounded. Where increasing intra-peritoneal hæmorrhage was threatening life and the surroundings and general condition of the patient allowed of it laparotomy should always be performed and the bleeding arrested, whether from torn vessels in the omentum or mesentery or from laceration of the liver or spleen. Only too often, however, extensive visceral injuries would also be found and a favourable result would not be obtained. Wounds of the liver, kidney, and spleen, as a rule, healed well, and when hæmorrhage was not dangerous required no operative treatment except for secondary complications, such as biliary fistula, hydronephrosis, or perinephric abscess. Laparotomy might be required when perforation of the stomach or bowel might have taken place. If one excluded those who died in the first 24 hours one might estimate that of the cases of penetrating abdominal wounds amenable to surgical treatment about 60 per cent. would recover. The recoveries, however, were chiefly amongst those cases in which the area of the small intestine was not crossed and when this area was involved the mortality was probably very great. Too often without exploration one could not be sure whether perforation existed or not, and whilst a routine laparotomy was not justifiable in every case it should be performed at the first evidence that perforation existed. Such evidence might be found in the persistence of shock, a steady increase in the rate of pulse, and in the abdomen becoming increasingly rigid and tender, and especially was it probable if vomiting had persisted and the passage of flatus was arrested. In these circumstances, and when the surroundings were such as not to expose the patient to fresh dangers, the operation should not be delayed, and the apertures might be dealt with by suturing or the area of the wound might be resected, according to the condition found. Especially was the operation likely to prove successful when the injury was localised, the patient was seen within six hours of being wounded, and transport had not been difficult. When the bullet was retained or the track was a complete transverse one the prognosis was far less favourable. The results of laparotomy for gunshot wounds in war had been most unfavourable. In the Spanish-American war Senn reported that all cases he knew of that had been operated on died. In the Tirah campaign, of eight cases of penetrating wounds of the abdomen five had been operated on and all died. In the Boer war he (the speaker) only knew of two successful operations performed for wounds of the small intestine. In the American war in the Philippines Dr. Robinson reported that five cases had been operated on and four died. The unfavourable results were attributable to various causes. The severity of the injuries, the delay in bringing in the wounded, difficult transport, and the unfavourable surroundings rendered abdominal operations at the front in most cases unpermissible. One was led to the following conclusions. 1. That as a rule the conditions in a field hospital were not suitable for performing laparotomy. Moreover, many patients with penetrating abdominal wounds recovered without operation, and in the majority of those who died the nature of the injury was such that death must have resulted whatever had been the conditions of operation and an exploratory laparotomy might add a fresh danger to the patient. 2. When occasions arose in which the conditions of operation approximated to those in civil practice laparotomy should be undertaken, for increasing intra-peritoneal hæmorrhage must endanger life. Also when there was evidence that perforation of the stomach or bowel existed, provided that the patient was seen early enough, laparotomy was called for.

The PRESIDENT commended the paper for its valuable practical suggestions and invited discussion.

Dr. FORBES ROSS said that Mr. Roberts's excellent paper tended to support the predictions made by Mr. Clinton Dent and Sir Frederick Treves, "that the small-bore bullet was a most humane missile." In cases of abdominal injury from small-bore bullets experience would tend to show that the surgeon would be more deadly than "our friend the enemy." It would now become an accepted axiom not to operate in injuries of the abdomen inflicted by a small-bore bullet unless forced to do so by urgent symptoms.

Brigade-Surgeon-Lieutenant-Colonel P. B. GILES contributed a paper (*in absentiâ*) entitled

The Brigade Medical Unit.

He stated that under modern conditions of extended front and long-range fire extra individual teaching for the regimental stretcher-bearer would be necessary. The men should be taught the principles of first-aid and also how to take advantage of cover whilst approaching the wounded. The regimental medical officer should have a non-commissioned officer of the Royal Army Medical Corps instead of from the

regiment. The bearer companies and the field hospital should be joined as one unit under one command and not be distinct as hitherto. Field hospitals should be placed as near the field of action as possible, but not so as to interfere with any position of strategy, and should never be pitched at a distance from a good road if available.

The PRESIDENT then put a motion to the meeting, proposed by Surgeon-General HAMILTON and seconded by Lieutenant-Colonel HYSLOP, D.S.O., to the effect—

That ambulance wagons should be painted a conspicuous colour, preferably white for coolness, and should be provided with a red-cross flag much larger than was hitherto used.

The motion was carried unanimously.

The business of the section was concluded by a cordial vote of thanks to the President for discharging in so genial and able a manner his arduous duties; and Dr. FORBES ROSS in proposing this vote of thanks, which was seconded by Inspector-General TURNBULL, R.N., said that the 1902 meeting at Manchester would be memorable in that at that meeting the members were allowed to indulge in the "weed."

The PRESIDENT briefly replied.

TROPICAL DISEASES.

FRIDAY, AUGUST 1ST.

Mr. JAMES CANTLIE (London) opened the discussion on

Yellow Fever

by stating the conclusions arrived at by the United States Army Commission in Cuba. The Commission had demonstrated (1) the fact that none of the bacilli hitherto described, including that of Sanarelli, played any part in the etiology of yellow fever; (2) that no bacillus or other organism could be found in fresh blood, in defibrinated blood, or in blood diluted and filtered through a Berkefeld filter, and therefore that either our methods of investigation are faulty or that the germ is ultra-microscopic, or that no germ exists; (3) that the specific agent of yellow fever was destroyed by exposure for 10 minutes to a temperature of 55° C.; (4) that the blood taken from a yellow fever patient and injected into healthy non-immune persons caused the disease and that defibrinated blood and blood passed through a Berkefeld filter also caused the disease; (5) that fomites did not convey the disease (this was tested in the most thorough fashion and proved beyond doubt); (6) that the mosquito—the stegomyia fasciata—after having fed on a patient suffering from yellow fever caused by its bite the disease in healthy non-immune persons; (7) that the mosquito could not convey the disease until 12 days after feeding; and (8) that the mosquito was capable of conveying the disease 57 days after it had fed on yellow fever patients. Mr. Cantlie mentioned various diseases in which yellowness of the skin occurred independently of biliary obstruction. Amongst these he mentioned acute yellow atrophy, bilious remittent, relapsing fever, and bilious typhoid fever. The last-named was especially prevalent in Egypt, for in the early days of the last century it was named yellow fever and was still frequently so termed. He thought it possible that yellow fever was more widespread than the literature at the present day allowed.

Dr. GEORGE C. LOW, Craggs Scholar, London School of Tropical Medicine, sent a paper on

The Differential Diagnosis of Yellow Fever and Malignant Malaria.

Dr. LOW stated that the diagnosis of yellow fever on its first occurring in a non-endemic area where malaria was prevalent was often by no means a simple affair. The facial appearance, the condition of the tongue, the state of the skin, the relation of the temperature and the pulse, the presence of albumin in the urine, epigastric pain, the vomit, hæmaturia, and the condition of the nervous system, all of which were described in text-books as features by which yellow fever might be diagnosed, were quite untrustworthy. The only positive diagnosis was by a blood examination and even then it must be remembered that malaria parasites might co-exist in the blood with the poison of yellow fever. Post mortem the characteristic malarial pigment, the localisation of parasites in the brain, spleen, or gastric mucosa at once declared the cause to be malarial, and in yellow fever the liver showed the typical fatty degeneration.

Dr. PATRICK MANSON, C.M.G., F.R.S. (London), drew attention to the possible errors in the experiments of the United States Army Commission and pointed out that in the experiments made by passing blood through a Berkefeld filter the blood from only one patient had been used.

Dr. L. W. SAMBON thought that the diagnosis between malaria and yellow fever would be much easier when they had succeeded in separating blackwater fever from the intermittent fever with which it was now confounded. It was difficult at times to diagnose blackwater fever from yellow fever. Hæmoglobinuria was, as a rule, absent in yellow fever, yet he held that the existence of blackwater fever on the west coast of Africa was greatly responsible for the notion that yellow fever prevailed there.

Malta Fever.

Mr. P. W. BASSETT-SMITH, staff surgeon, R.N. (Haslar), contributed a paper on

The Agglutinating Properties in the Blood in Cases of Mediterranean Fever, with Special Regard to Prognosis; with Remarks on other Blood Changes and Reactions during the Course of the Disease.

In the wards of Haslar Hospital as many as 196 cases of Mediterranean or Malta fever had been treated during the past two and a half years. The agglutination of the micrococcus melitensis when brought in contact with dilutions of blood of patients suffering from malta fever was early established and became an efficient method for diagnosis. The agglutinating properties commenced early (five days) and lasted long (one and a half years). The technique employed consisted in using an emulsion made from a five days' old agar culture of the micrococcus in saline solution; this was drawn up into sterile pipettes and killed at 65° C. for a period of 15 minutes, the same series of pipettes being utilised throughout in the cases. The blood was centrifugalised and the serum generally employed a few hours after it was obtained; the dilutions were made with a measuring pipette as recommended by Professor Wright, an equal part of diluted serum (20 cubic millimetres) and emulsion being always used, so that the number of organisms present in each sedimentation tube was approximately the same in each instance. These were left at room temperature for 24 hours and the results then recorded, the dilutions ranging from 1 in 20 to 1 in 2000. Equal parts of clear blood serum were drawn up in tubes with spiral twist, incubated at 37° C. for 24 hours, and then blown out on thick agar plates which were incubated for from three to seven days, when the presence or absence of growth of the micrococcus melitensis could be observed. If there was no growth one inferred that the serum had been able to kill off the organisms present in that dilution and so estimate the bactericidal power, which was in all cases very considerably less than that found against the typhoid organism. Mr. Bassett-Smith also drew attention to the phagocytic power of leucocytes and to the general blood changes in the disease.

Mr. JAMES A. HISLOP (Assam) contributed a paper on

The Geographical Distribution of Malta Fever and the Value of Splenic Enlargements as a Test of Malarial Incidence.

Mr. Hislop drew attention to some cases of Malta fever which he had observed in Assam and believed that many fevers classed as malaria and remittent fever would be found to be Malta fever. The serum test had given positive results in several cases and the charts showed the undulant nature of the temperature. Mr. Hislop described a form of fever in Assam which was absolutely resistant to large doses of quinine and yet accompanied by great enlargement of the spleen. He believed this to be a specific form of disease independent of malarial infection and requiring further investigation and interpretation.

Dr. C. A. BENTLEY (Tezpur, Assam) contributed a paper entitled

Kala-azar as an Analogous Disease to Malta Fever: Preliminary Notes of an Investigation and some Discoveries regarding the Nature and Condition known as Kala-azar.

This disease had been attributed to ankylostomiasis, to an intense form of malarial fever, and to post-malarial cachexia. Dr. Bentley concluded that kala-azar had nothing to do with malaria in any form but was a distinct disease. By none of the three tests for malaria—viz., periodicity, the effect of quinine, or the microscopic examination of the blood—could kala-azar be in any way associated with malarial fever. In summing up the result of his investigations Dr. Bentley said: "The hæmatology of kala-azar lends no support to

the malarial theory of origin, while it corresponds to the little at present known of the blood conditions of Malta fever."

Dr. BRIAN MELLAND (Bowdon) read a paper on

Malta Fever in the Canaries.

Dr. MANSON, in criticising the statements made as to the presence of Malta fever in India and the identity of kala-azar with this disease, said that too much reliance seemed to have been placed on the agglutination tests. He related an instance in which he submitted a case of doubtful fever to three experts: one affirmed that the blood gave the reaction of Malta fever, a second declared that it was from a person suffering from typhoid fever, and a third that it was neither Malta fever nor typhoid fever. He would ask investigators not to place too great reliance upon serum tests in cases of doubtful forms of illness.

Professor GALLI-VALERIO (University of Lausanne) contributed a paper entitled

Contribution to the Study of Bacillus Pestis; its Cultural and Morphological Characters and its Relations with Bacillus Pseudo-tuberculosis Rodentium.

He dealt first with the characters of the cultures of bacillus pestis; secondly with the morphology of bacillus pestis, and thirdly, compared the bacillus pestis with bacillus pseudo-tuberculosis rodentium. He maintained that confusion in the diagnosis of plague by the inoculation of guinea-pigs might arise from the fact that the bacillus pseudo-tuberculosis might be present in the guinea-pig and the two bacilli exhibited many points in common.

Dr. SAMBON read a paper on

Remarks concerning the Nomenclature, Etiology, and Prophylaxis of the Intermittent Fevers.

He recommended that the term "malaria" ought to be abolished. The old name "intermittent fevers" might be continued or the term "hæmocytozoal fevers" adopted. The name "æstivo-autumnal" was inappropriate; "tropical malaria" gave a false notion of the widespread nature of the disease, which went beyond the tropics. The old terms "semi-tertian" or "sub-tertian" were worthy of re-instatement. The name "plasmodium" applied to the parasite was most inappropriate. Dr. Sambon was of the opinion that the parasites of quartan, tertian, and subtertian (æstivo-autumnal) should be classed in one genus and called respectively hæmamœba Golgii, hæmamœba vivax, and hæmamœba Laverani.

Dr. MANSON stated that he agreed with Dr. Sambon's nomenclature.

Surgeon-Major G. K. POOLE (London) remarked that he had seen quartan fever in Eastern Bengal.

ASYLUM REPORTS.

Dorset County Asylum (Annual Report for 1901).—The average number of patients resident during the year was 732, comprising 359 males and 373 females. The admissions during the year amounted to 145—viz., 73 males and 72 females. Of these 119 were first admissions. Dr. P. W. Macdonald, the medical superintendent, states in his report that the past two or three years of national excitement and tension have had an influence on the male admission-rate, which now shows a tendency to increase. "Recent experience lends credence to the opinion that strain and exposure are having their victims even among the strong and healthy, and ..... it has to be admitted that a percentage of these cases are finding their way into institutions for the treatment of mental disease." Whether such cases are to be regarded as due to exceptional stresses and trying circumstances connected with the war or are merely the ordinary result of active service it is difficult to say; but such cases were found to be the most hopeless and least favourable as regards prospect of recovery among the admissions, and "their one outstanding characteristic was the complete and painful early dementia." The admission-rate was somewhat higher than usual, but this was not compensated for by any general improvement in the character of the cases. "The female patients as a class were less favourable than the males and several were the subjects of grave physical ailments." As regards the males, 70 per cent. were classed as incurable on admission, and in the case of the women the proportion of incurable patients was as high as 80 per cent. The unfavourable and hopeless character of the admissions was not associated with any particular form of mental disease. A large increase appeared in the proportion of aged patients among the admissions. The senile cases were "unfavourable as regards any hope of recovery and it is to be regretted," adds Dr. Macdonald, "that these aged men and women could not be cared for elsewhere." Worry and anxiety accounted for 12 per cent. and hereditary predisposition to insanity was traceable in 45 per cent. of the admissions. The number of patients discharged as recovered during the year amounted to 50—viz., 22 males and 28 females, or 6·8 per cent. of the average number resident. The deaths during the year amounted to 47—viz., 24 males and 23 females, or 6·4 per cent. as calculated on the same basis. Of the deaths two were due to renal disease, two each to bronchitis and to phthisis, four to cerebral hæmorrhage, five each to senile decay and cerebral degeneration, six to cardiac disease, and the rest to other causes. The committee of management states in its report that plans for a separate new building for the use of private patients have been prepared and approved of and that the work will be shortly proceeded with. The weekly maintenance-rate for patients has remained at 9*s.* 4*d.* during the year. The report of the Commissioners in Lunacy is not appended.

TUBE RAILWAYS.

THE concentration within the heart of London of the radiating lines of traffic from the growing suburbs, and the chronic upheaval of the streets consequent upon the tangle of sewers, hydraulic power, water, and gas mains, besides telegraph, telephone, and electric-lighting cables, have produced such a state of congestion as to be insupportable. The necessity for rapid communication between the extremes of the outer circle with the centre of the metropolis and with each other, in view of the vast population of London, is a sufficient reason for welcoming any proposal that promises relief. In the following article we propose to touch briefly upon those points in the now numerous schemes for tube railways in London which have a bearing upon the public health of the metropolis in a comprehensive sense.

There is a natural tendency for promoters of proposed tube lines, with an eye to dividends, to tap the more populous districts, but their lines should not be permitted to terminate here or facilities for locomotion will but increase the already overcrowded condition of these parts. The new lines should pass on to more open country and those that contemplate the establishment of direct communication between extreme points of London, from north to south or east to west, providing for the proper expansion of the city, are certainly most deserving of popular support. London recently has borne a strong resemblance to a newly-discovered gold-field. There has been a wild rush by various syndicates to peg out their claims and to obtain concessions. In some cases there have been two or more applicants for one plot. Some of these have recognised the wisdom of combination but disappointment has been the lot of the majority. Engineers, with praiseworthy anxiety to promote their own professional interests, are all on the side of the new tube railways. The idea is fascinating, the opportunity is golden, no voice is heard to criticise adversely the optimistic views taken by the promoters. Indeed, when every man of any note in the English engineering world is interested in some similar undertaking, what member of their institute would be so bold as to question their proceedings?

Impatience of control is a characteristic of those responsible for these undertakings. It was stated during the proceedings in connexion with the Metropolitan District Railway Bill before a Departmental Committee that it is not the duty of any Government Department to inquire into such proposals. This formed the subject of a report by the Committee to the House of Commons which concluded thus: "In view of the rapid development of such undertakings and the novel, and possibly dangerous, character of some of the proposals, the committee consider it desirable that in future every Bill containing such proposals should be reported upon by the Board of Trade." Fortunately, therefore, Parliament is able to check to some extent the exuberance of all similar undertakings. And in regard to

the tube railways a debt of gratitude is due to the London County Council for the careful consideration given to the various proposals, and for its able comments upon them, though the fact of its harbouring rival suggestions in the form of shallow subways has, in the eyes of some, militated against the value of its criticism. It is the duty of all who are in any way the custodians of the public welfare and the public health to examine the various projects put forward, which does not mean that there should be any attempt on the part of municipal bodies to convert themselves into gigantic trading monopolies.

The recent developments in connexion with tube railways, unforeseen or disregarded by those responsible for them, do not tend to induce such implicit reliance upon the assertions of their promotors as might be desired, but while railways of some sort to connect up the distant parts of the city are necessary, underground railways are preferable to overhead lines as used in America. The first question, allowing their necessity, is, Are deep tube lines or shallow subways the more desirable for London within a radius of six miles from Charing Cross? The difficulties attendant upon the constructing of shallow subways would, of course, be enormous, owing to the existence of the various connexions of house and street gully drains with the sewers. Possibly, in most cases, the sewers themselves might have to be diverted, together with water, gas, and electric mains, while the risk of damage to adjacent property likely to arise from tunneling would be considerable and the dislocation of business enormous. In the construction of the Central London Railway at the Bank station such obstacles were, however, successfully grappled with.

The advantages of these shallow subways over the low-level tubes to the lay mind appear to be considerable. There would be economic difficulties but it is questionable if these are insuperable.[1] The accumulated sum annually spent by municipal bodies on repairs to the roads owing to continual disturbance must represent the interest on a large funded capital. The same may be said of other interested companies and of the Post Office. The payment of a rental to the railway by the different bodies using the subway for access to their property should produce a large revenue while effecting a saving to each tenant. The miles of road thus rendered free for surface traffic would be very great. But the mind can hardly contemplate the dreadful inconvenience to the public, and the real pecuniary loss to the nation, that is implied in the closing for six months of such a thoroughfare as, say, the Strand. This and similar things would, however, have to be done.

No useful purpose would be attained by discussing all of the very many schemes for tube railways submitted to the two committees presided over by Lord Ribblesdale and Lord Windsor respectively. The following are only those that, having successfully passed the first stage, come before the House of Commons in due course for approval or rejection. It will be a cause of satisfaction to many to know that the committees jointly contemplate the introduction of a general clause to be inserted in all Bills, dealing with every question of damage to property arising within a period of two years at least from the date of opening the lines, either through "construction or working." This clause will not be retrospective in its action, and cases will be tried before a special tribunal. The committees have also exercised a wise discretion by eliminating many of the lines, evidently in the interests of the investing public. For on the continent, where electric traction has made such rapid advances, many of the leading companies have recently suffered serious depression.

It is a fact that many people do not know what lines of tube railways are projected even though their houses may be in close proximity to one of them. We will therefore begin by indicating the course taken by the various schemes which have a good chance of coming to completion. First in order may be taken the District, or Yerkes, group, to be run in connexion with the Metropolitan District Railway, now shortly to be "electrified." It consists of the following lines run under the title of—

THE UNDERGROUND ELECTRIC RAILWAY COMPANY OF LONDON, LIMITED.

The Brompton and Piccadilly-circus Railway.—Authorised in 1897 with a limit of time for the compulsatory purchase of land to August 1st, 1900, and for the completion of works to August 1st, 1902. An extension of time was afterwards obtained to 1902 and 1904 respectively. A still further extension of time is now sought to 1904 and 1906 which has been granted in committee. From the terminus at Earl's Court the line follows the existing line to South Kensington, as by an arrangement with the Metropolitan District Railway that part of their deep-level line has been transferred to the Brompton and Piccadilly Railway. There is to be a generating station at Lot's-road, Chelsea. At South Kensington the new line will branch north-east to a station in the Brompton-road by the corner of Ovington-square, following the Brompton-road to Knightsbridge and on to Piccadilly-circus, the next station *en route* being Sloane-street, at which point the line comes in touch with the proposed Hammersmith and City tube line and the line from the Marble Arch to Clapham Junction. The next station is Hyde-park-corner; Dover-street, Albemarle-street, and Piccadilly-circus follow. A subway will here connect this line with that of the Piccadilly and City. At Piccadilly-circus a junction was proposed, one branch to run under Leicester-square to connect with the District deep-level at Charing Cross; the other branch, after crossing the Baker-street and Waterloo line, and farther on the proposed Charing Cross, Euston, and Hampstead line, to continue, with possibly a station in Cranbourne-street, to Little Queen-street, Holborn, where it would connect with the Great Northern and Strand tube running to Finsbury-park. The branch line between Piccadilly-circus and Charing Cross was thrown out in committee.

The Great Northern and Strand Railway.—This tube is to start from the Crescent, now building in the Strand. From here it passes under the new street and London County Council subway, and then runs north across Holborn (where there is a junction) to the corner of Southampton-street and Russell-square. Here it bears east to the corner of Guilford-street, crossing Great Coram-street, Compton-street, Judd-street, and Manchester-street, where it takes a direct line to a station under the Great Northern Railway station. From here it closely follows the course of the Great Northern Railway to Finsbury-park. Completion of this line is promised in about three years.

Charing Cross, Euston, and Hampstead Railway.—Leaving Charing Cross this tube takes a direct line to the corner of Tottenham Court-road, crossing the tubes of the Brompton and Piccadilly and Central London Railways. It runs under the whole length of the Tottenam Court-road and then takes a sharp curve east to a station at Euston. From here it runs directly to Camden Town to a junction at the "Mother Red Cap." One branch now bears north-west for Golder's-green with stations at Chalk Farm, Belsize-park, Hampstead, and North End. The other line keeps due north, with stations at Kentish Town, Highgate-road, Dartmouth-park-road, Archway-road, and Highgate Archway. Another extension of this line from Hampstead to Edgware has passed the committee: it is not a tube line.

The Baker-street and Waterloo Railway.—This tube was authorised in 1893 between these two points, though but little was done until it was financed by the "London and Globe Finance Corporation" in 1897. On the failure of this corporation in 1901 the undertaking was acquired by, and became amalgamated with, the Yerkes group. The line is now nearly half finished, the tunnel being completed under the river, and the line will probably be ready for traffic in about two years' time. Extensions have been granted from Baker-street to Paddington and from Waterloo to the Elephant and Castle. Leaving Paddington station, the tube takes a fairly direct line east to the Edgware-road, where it crosses the North-West London tube, passing to Baker-street, with an intermediate station at Marylebone, in proximity to the Great Central London station. From Baker-street it takes a wide curve, under Regent's-park, north of York-terrace; turning south under the Metropolitan line it runs under Portland-place, with a station at Oxford-circus where the line crosses the Central London tube and follows the course of Regent-street. There will be a station at Piccadilly-circus. From here it runs with slight deviation to a station at Charing Cross, crossing the river west of the South Eastern railway bridge to Waterloo station, thence to a station at St. George's-circus and under the London-road to the Elephant and Castle.

The District Railway intends to run 12 trains per hour each way between Earl's Court and the City and six per hour from Harrow, Ealing, Richmond, and Hounslow, all passing

[1] Roughly, tube lines cost about £250,000 per mile to construct. The cost of the London County Council subway now building in the new street between Holborn and the Strand is at the rate of over £340,000 per mile in a new road. This cost would be increased in running through an existing thoroughfare.

through Hammersmith, which latter busy station will thus be provided with a most ample service. A five-minute service is also promised from Wimbledon and Putney, some trains going to High-street, Kensington, and others to the City. The Brompton and Piccadilly line will run a 10-minute service from Earl's Court to Piccadilly-circus and Finsbury-park, with an all-night 15-minute service. There will also be an all-night 15-minute service on the District Railway. No fares have yet been fixed, but it is believed that apart from the District Railway the fare will be the same throughout, the short distance paying for the long.

It will be seen that the advantages offered by this group are very great, connecting as it does a vast network of existing rail and tramway lines hitherto isolated. The facilities offered by this system of intercommunication may help the housing problem to some extent, while the central portion of the line will unquestionably accommodate a vast quantity of midday traffic to the relief of the congested streets of business London.

We next come to—

THE LONDON UNITED, OR WHITE-MORGAN, GROUP.

This is, or was, a combination of the following proposed tubes:—

Hammersmith to Charing Cross and City.—Among the schemes proposed by the London United Electric Railway Company under Mr. White's chairmanship, was a tube line running from Barnes through Hammersmith to Charing Cross which would have competed to some extent with one of the lines of the Pierpont Morgan groups—viz., the Piccadilly and City Railway. These lines have now amalgamated thus. The London United will run its proposed line only as far as Hyde-park-corner and the Piccadilly and City line is to continue on to Ludgate-hill and the Mansion House. At the western end of the line a loop was to have been formed running up Holland-park-road to Shepherd's Bush, returning down the Grove to Hammersmith Broadway, thus connecting the two chief radiating points of the London United Electric Tram lines that will eventually serve a very extensive district, including Harlesden, Acton, Ealing, Uxbridge, Cranford, Hanworth, Hampton, Staines, Ditton, Surbiton, Kingston, Teddington, Richmond, Wimbledon, &c. The western loop from Addison-road to Shepherd's Bush was very properly rejected by the committee, as it would have served no useful public purpose, while competing unfairly with the Central London line which is at present fed by the tram service at the Shepherd's Bush centre. The following are the points at which it is proposed to build a station: Hammersmith Broadway, Addison-road, High-street Kensington, Queen's-gate, Sloane-street (where there will be an exchange station with another line belonging to the same group running from Wandsworth to the Marble Arch, at which latter station there will be an exchange with the North-West London line to Cricklewood as well as with the Central London line), Hyde-park-corner, Albemarle-street, Piccadilly-circus, Charing Cross, Law Courts, and Ludgate-circus. Here, in order to avoid St. Paul's Cathedral, the line turns south to Upper Thames-street, which it follows, entering Cannon-street from behind the existing Mansion House station. From Cannon-street station the line is continued as—

The North-East London Tube Railway.—It was originally proposed to run this line to Chase Side, Southgate, but owing to local opposition the portion between Palmer's-green and Chase Side was thrown out in committee. The stations *en route* are the Monument, Bishopgate-street Without, Hackney-road, Kingsland-road, Stamford-road, Arcola-street, and Church-street Stoke Newington for Abney Park. At Stamford-hill the line comes to the surface. (It is in this neighbourhood that the London County Council proposes to form a working-class colony.) At Church-street also a branch line to the east was contemplated by the railway company but this was abandoned when the coalition took place with the now discarded City and North-East Suburban line. After Church-street the stations are Amhurst Park, High-road, The Avenue, Lordship-lane, White Hart-lane, Chequers-green, to Palmer's-green. The line crosses under several existing railway lines before reaching Tottenham.

The City and North-East Suburban Railway from Cannon-street to Waltham Abbey also formed a part of the partnership, but owing to the piece of line between Cannon-street and Whitechapel having been thrown out in committee the White-Morgan party dissociated themselves from the undertaking which has since been abandoned. This line is an unfortunate example of the "between two stools" proverb. It was originally intended to form a junction at the Mansion House station with the Metropolitan District Railway Company which was willing that the proposed tube should run for some distance under the Metropolitan line; differences arising upon financial questions coupled with the appearance upon the scene of the White-Morgan combination induced the promotors of the tube line to transfer their interests to that group. This was resented by the Metropolitan District Railway and the tube line was stoutly and successfully opposed.

The Marble Arch to Wandsworth Railway.—This line will run from the Marble Arch in a direct line across the park to Sloane-street, which is to be an interchange station with the Hammersmith and City line; passing along Sloane-street to a station at Sloane-square it will come in close touch with the District Railway. There will be a power station at Chelsea where the line crosses the river to Battersea-park. The next station will be Queen's-road (Battersea), Lavender-hill and Clapham Junction following.

There will be some 100 miles of line in these combined railways with a service at a few minutes' interval, while the proposed fares are of a revolutionary character. From Hammersmith to Charing Cross 1*d.*, and from Sloane-street to the City 1*d.*; from Cannon-street to Stamford-road 1*d.*, and from Seven Sisters-road to Palmers-green 1*d.*, while the entire journey costs 4*d.* Workmen's tickets at half fares will be issued from 4 o'clock to 7.30 A.M., available to return by any train during the day. It is intended to introduce where possible moving platforms sloping up to the street level to supersede the use of ordinary lifts. Unquestionably this group meets the recommendation of the joint committee on tube railways last year and will materially help the solution of the housing problem, connecting as it does north-east and south-west suburban London with a complete net-work of tubes and electric trams. In view of the enormous and increasing population in the district through which the proposed City and North-East Suburban Railway was to have passed and the greatly overcrowded state of the existing railway accommodation the abandonment of the undertaking is a matter for regret.

INDEPENDENT LINES.

The Central London Railway.—Leaving the Bank station it proposes to form a loop touching Liverpool-street to connect with the North London and Great Eastern stations, returning to run west *viâ* Thames-street, Ludgate-circus, the Strand, Charing Cross, Piccadilly, Knightsbridge, Kensington, Hammersmith, and to complete a circle by connecting with the existing station at Shepherd's Bush. The extension from Shepherd's Bush *viâ* Hammersmith and Kensington to the City was thrown out in committee; the loop to Liverpool-street has been abandoned for the present. The committee could not well have come to any other decision, considering the public advantages offered by the competing scheme put forward by the London United Electric Company. The committees have been jealous of admitting any proposals where there seemed a possibility of the concessions being utilised for the purpose of blocking the route for any other line, though in this instance there was nothing to indicate such an intention. Sir Benjamin Baker, the engineer of the line, in his examination in support of the proposed extension of the Central London Railway to Hammersmith, returning to the City *viâ* Piccadilly and the Strand, was evidently anxious to convert the existing shuttle service into a circle, partly in order to avoid the trains having to cross over the line at each end, in continually doing which the men, he stated, were apt to get into a kind of "penny-in-the-slot" method of working which did not conduce to safety.

The North-West London Railway.—This line was authorised in 1899 but owing to financial reasons construction has been delayed. Its promoter seeks an extension of time to complete, which has been granted by the committee. The proposed line will run from the Marble Arch through Maidavale, Kilburn, Brondesbury, and Cricklewood to Child's-hill. Employers of labour will be permitted to purchase workmen's tickets in bulk to dispense to their employés at 1½*d.* for a single whole-distance journey and 2½*d.* for the double one.

The Great Northern and City Railway.—Authorised from Moorgate-street to Finsbury-park. This line is almost completed, the stations having yet to be finished. It is the largest-sized tube yet constructed, being 16 ft. in diameter

as against 11 ft. 6 in. on the Central London line. The lower portion of the tube is constructed in brickwork. It was originally intended to allow the Great Northern Company's trains to run through to Moorgate-street by changing the ordinary locomotive for a motor at Finsbury-park. For some reason unknown to the public this arrangement with the Great Northern Company collapsed, and the line will now be run independently as an electric railway, although with the moral support of the Great Northern Company. The generating station is at Pool-street on the Regent's Canal. It is the largest yet built, the engine house alone measuring 122 ft. by 52 ft. by some 60 ft. high. An extension from Moorgate-street to Lothbury was passed in committee. It is proposed to connect the Lothbury station with the existing Bank station by a subway. There will be five lift-shafts sunk between the corner of the Bank and Moorgate-street with an underground station, and this has given rise to a special Bank clause for the protection of the building. The next station from Lothbury will be Moorgate-street and then Old-street, up to which point the tube runs in the same direction but below that of the South London line; just beyond Old-street the lines diverge, the South London line going up the City-road and the Great Northern and City line going up the New North-road to a station at Essex-road, afterwards taking a direct line through Canonbury under the North London Railway to Highbury, and from there to Finsbury-park. A further extension is intended to Wood Green.

The London County Council Subway for Electric Trams.—This will run from Holborn to the Embankment and the tunnel will be 18 feet wide by 13 feet high. Starting from Theobalds-road its course lies under the new avenue down to the Embankment, the idea being by means of proposed tramways along the Embankment to connect the present terminus of the East-End trams at Theobald's-road with the trams on the south side of the river. There is, and has been, a good deal said about the trams spoiling the Embankment. As a matter of fact, the road is but little used as a promenade. The place has missed its opportunities. A row of good shops, with cafés, tables for coffee, chairs under the trees and a theatre would have utilised a splendid thoroughfare and relieved the Strand of its congested traffic—perhaps the cafés and theatres will come in time with the trams.

The City and Brixton Line.—This is a line that has recently emerged from obscurity, making a bid for popularity by assuming the seductive title of the "City and Surrey Railway." It is under the guidance of Mr. Harry J. Lawson, and is in some way associated with the South London tube line, having received Parliamentary powers in 1898. It proposed to occupy the abandoned station of the South London line at the Monument and the tunnels in connexion under the Thames. Want of enterprise on the part of investors has blighted the earlier prospects of this undertaking. A capital sum of over £1,000,000 is likely to be required, but the contractors are, it seems, anxious to begin work and will start operations upon £150,000 being raised, for which they will pay interest to investors at 5 per cent. during the progress of the work. Nay, more, they will give a bonus to shareholders of some 17½ per cent. out of their own little profits. Parliament is to be asked to extend power to carry the line as a light railway to Reigate and eventually to the sea. This is romantic nonsense. What contract would bear profits such as would admit of 17½ per cent. being given out of them? Or how could the little station at the Monument with the small tubes under the Thames suffice for a busy local traffic and a long distance main-line traffic also? The station and tubes might possibly manage the former but certainly not the latter.

Such are the main schemes in course of completion. Upon the whole the committees have made a wise selection from the many projects submitted to them, and have evidently looked at them, not so much from the individual as from the collective standpoint. The result should be a relief of the congested street and suburban railway traffic, a help to the solution of the housing problem, and a consequent reduction of the existing danger to health from overcrowding.

The throwing out of the Bill to extend the "South London" line from the "Angel" at Islington to Euston is from the point of public convenience a matter for regret.

In THE LANCET of May 12th, 1900, just prior to the opening of the Central London Railway, there was published an article dealing with the probable effect of the construction of the line upon the drainage of the subsoil water in its vicinity; subsequent events have rather strengthened than modified the views then expressed and we refer our readers to the article in question. Our forecast was in all interested quarters described as an unwarranted attempt to scare the public, so that no one need be surprised to find our view largely confirmed by subsequent events. In the discursive remarks that follow upon certain details in the construction of tube railways—especially in regard to the prevention of accidents and of nuisance from vibration, and the provision of proper ventilation—it will be seen that upon the whole we take a cheerful view of the undertakings. But the public is much more awake now than it was two or three years ago to the inconveniences and risks that may counterbalance the advantages of underground travelling.

The questions connected with the construction of the proposed lines are of such a highly technical nature that no one but an engineer would venture upon technical criticism, but criticism is not valueless because it is not technical. Into the respective merits of a three-and-a-half or four-and-a-half chain curve it is impossible, for example, for us to enter, but it must be evident to the least initiated that a train running at a high rate of speed down a gradient such as, say, from Piccadilly to Charing Cross, and making too sharp a turn round to the Strand at the bottom of the hill, stands some extra chance of being derailed in the case of the sharper curve.

Diameter of the tube.—There exists some diversity of professional opinion as to the desirability of using tubes of 11 feet and six inches in diameter, as at present in use on the Central London line, or of 13 feet and six inches, the minimum size suggested by Colonel Yorke, electrical adviser to the Board of Trade, who holds strongly to this opinion. The latter size greatly increases the cost of construction. Mr. Brereton, Sir J. Wolf Barry's partner as engineer to the proposed Brompton and Fulham line, estimates the cost of a tube of 11 feet and six inches on his line at £40 per yard, and of a tube of 13 feet and six inches at £48 per yard, but the larger tube has the advantage of permitting the use of the ordinary railway rolling-stock, while giving greater facilities for repairs to the lines, which is important in the case of all-night services and for the exit of passengers in the event of a breakdown. There would seem also to be another important advantage that relates to ventilation.

Ventilation.—Should a serious breakdown occur the probability is that between the stations most widely apart there would be two trains in the tunnel at one time. In the smaller tube the circulation of air would then be greatly impeded. It has now been generally admitted that the hopes of the engineers as to the ventilation of the tunnels by the passage of the trains have not been realised and efforts are being made on the Central London line to accomplish this at night by a process of exhaustion. This, considering the numbers carried, must be quite inadequate to the requirements. At present it is very noticeable how large a proportion of the passengers are affected by the influence of an excessive quantity of carbonic acid gas associated with other human exhalations. What might result from a prolonged exposure in the event of a serious accident is not pleasant to contemplate. There have been one or two fatal cases in which people have fallen upon the line from some cause not very clearly defined. It is understood that the Great Northern and City railways will have a continuous current of fresh air admitted at some point between each station. This in conjunction with the large size of the tube should give very good results.

Both Mr. Yerkes and Mr. Perks (the chairman of the Metropolitan District Railway), in giving evidence on the tube lines connected with the District Railway, undertook to change the air of each mile of tube every 45 minutes, presumably by a system of fans. The difficulty in the existing lines is no doubt greatly increased by the continued action of the lifts which are constantly reversing the draught. Colonel Yorke would wish the fans to be driven by some other motive power than electricity, so that in the event of any breakdown in the electrical arrangements the fans would still continue to work.

Accidents.—Much has been said in committee as to the desirability of side doors to the cars and side tunnel platforms for use in any emergency. The opinion expressed by Mr. Yerkes is that they would tend to disaster during a panic. In the event of an accident that is quite conceivable. Doors at each end of the train with a centre platform are suggested in preference, but should a train be derailed

and collide with the sides of the tube few, if any, of these doors would open. It would be one more chance in the passenger's favour when the train was on fire if all such doors were skeleton ones filled in with some fabric which could be easily cut through with a penknife. The minds both of Mr. Yerkes and Sir Alexander Binnie are exceedingly receptive to fresh opinions and this, though excellent in its way, makes their views sometimes difficult to follow. Sir Alexander Binnie, for instance, last year gave evidence that confluent junctions were things to be avoided, but in his recent examinations his evidence seemed to be entirely in their favour; possibly Mr. Yerkes may have succeeded in convincing him of his former error. Mr. Yerkes, again, stated that at one time he was satisfied that a tunnel of 11 feet and six inches was too small and that there ought to be a footway at the side of the train; he is, we believe, now convinced that for safety one of 11 feet and six inches is the best. The reason which he gave was that in the case of the train being derailed a side platform would be swept away, but he proposed to put a centre platform, though what was to prevent this being swept away also he did not state. Sir Douglas Fox, engineer to the North-East London Railway, is in favour of the side platform, under which he proposes to place the conductors. Some kind of platform is necessary as it might be required for use in the event of a breakdown. The possibility of a fracture in the tube itself admitting water and thus setting up electrical connexion between the wreckage and the broken cables underlying the fractured platform might form an unpleasant feature in an accident. In a recent case at the West End of London the accidental fracture of a water main resulted in the setting up of a short electric circuit in one of the public supply cables, the effect of which was to boil the escaping water in the short space of time that elapsed between the accident and the fusing of the cut-out on the cable. It would seem within the bounds of possibility that side guide-wheels might be used in the smaller tube, thus lessening the chance of derailment and perhaps permitting the use of increased speed.

The London County Council and Colonel Yorke (on behalf of the Board of Trade) wisely advocate the lighting of the tunnels. It is to be hoped that the current supplying such lights will be generated and conducted by a system entirely independent of that supplying motive power as will be the case on the Great Northern and City line. The same may be said of the signals.

Vibration.—The bitter complaints of the nuisance due to vibration made by a section of the public dwelling above the course of the Central London Railway have roused the strongest opposition on the part of those likely to be affected by the proposed new lines. In a discussion on a paper read at the Auctioneers' Institute in December last by Mr. G. M. Freeman, K.C., Mr. Minshall maintained that one cause of the vibration on the Central London Railway arose from the gauge being six inches too narrow. In the experiments conducted by Lord Rayleigh's committee the trains made up upon the multiple-unit system, first used by Mr. Frank Sprague of New York, were found greatly to reduce the evil, though the extent to which this was successful upon the line in question has been variously estimated. The promised immunity from vibration seems to depend upon the fulfilment of several conditions. First, upon a more equal distribution of weight throughout the length of the trains. The heavy, almost springless engines, weighing possibly some 40 or 50 tons, are to give place to light spring motor-cars alternately coupled with ordinary cars or trailers upon the multiple-unit system in use on the American elevated lines. Another condition is the character of the rails used and the method adopted for fixing them. The rails in use upon the Central London line, where vibration has been most pronounced, are bolted directly on to the sleepers through the broad bottom web of the rail, each rail, however, being independent of its neighbour. The form of rail now proposed differs in section from this last and is attached to the sleepers by chairs, while it is also bolted to the adjoining rail with fish plates; the line thus forms one continuous whole. This avoids the jerk due to the depression of each rail as the engine passes from one to the other. A third condition is sinking the tubes to a greater depth. This last may minimise the intensity of any movement but will probably extend the area over which it may be felt.

Fire risk.—It is to be hoped that any calamity similar to the deplorable accident on the Liverpool Overhead Railway will be avoided by the adoption of precautions to the absence of which the sad loss of life on the Liverpool line must be attributed. Colonel Yorke in his evidence before Lord Windsor's committee anticipated little difficulty in guarding against this evil if the use of wood were avoided near cables and electrical machinery, or if, where used, it were protected by some non-combustible material—in fact, he advocated the general use of non-combustible material for all trains, stations, signal cabins, and other deep-sunk buildings. If wood must be used for sleepers owing to their lessening vibration they should not be creasoted but rendered non-inflammable by a process which Mr. Yerkes informed the committee was in use in England. Compressed asbestos will probably take the place of the lighter woodwork. This is all very satisfactory while all goes well, but in the event of an accident the various components of a carriage will be apt to rearrange themselves and live cables may form unexpected connexions. In providing against fire the forced draught which it is now proposed to use for ventilating the tunnels will always drive the flames in one direction, which is a factor worthy of consideration in providing means of exit in such an event.

Mr. Yerkes's opinion is that the safest place for a passenger in the event of an accident is the carriage in which he is seated and he deprecates the use of the larger and costlier tube with the side platform and side exits from the trains as conducive to panic; and, generally speaking, perhaps he is right, but should the train catch fire and there be but one exit available at the end a ghastly holocaust would result, while the panic would be too awful to contemplate. The smoke from creasoted sleepers might in such a case prove a merciful deliverance from suffering.

THE ANNUAL REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD FOR THE YEAR 1900–1901.[1]

FIRST NOTICE.

THE annual report of the principal medical officer of the Local Government Board is a volume the publication of which is looked forward to with interest by our readers, for it is always certain to contain a very large amount of information in regard to the present sanitary state of England and the means which are being adopted for the improvement of the existing conditions. In addition to this it gives an account of what is being done by means of careful laboratory experiments to elucidate points about which we are still in ignorance in regard to the etiology, and the prevention of disease. It can be said without boastfulness that no other country has produced so valuable a collection of works bearing on questions of public health as this series of annual reports, the first of which was published in the year 1870.

The present volume differs in no important point from its immediate predecessors and the arrangement of the contents is identical with that which was followed in previous years. The report of the principal medical officer, Mr. W. H. Power, occupies no more than 26 pages and it serves as an introduction to the record of work done by the officers in his department, summarises the conclusions which they have adopted as a result of their inquiries, and emphasises the points which are particularly worthy of note in the year's work. The chief points to which attention is called are arranged under the headings Vaccination and Public Vaccination (p. ix.), General Administrative Business of the Medical Department (p. xi.), the Distribution of the Plague and the Precautionary Measures adopted in the Country in view of its Advent (p. xix.), and Scientific Investigations made by Officers of the Board (p. xxii.).

Several of the experienced members of the medical staff of the Local Government Board have recently been employed on work not directly connected with the department, to which, therefore, their services have for the time in great measure been lost. Dr. H. F. Parsons, whose special report some 12 years ago on the influenza epidemic was of its kind a perfect piece of work, has been

[1] Thirtieth Annual Report of the Local Government Board, 1900–1. Supplement containing the Report of the Medical Officer for 1900–1. London: Eyre and Spottiswoode. 1902. (Cd. 747. Price 6s.)

appointed a member of the Departmental Committee to inquire into the organisation and staff of the Geological Survey. Dr. H. T. Bulstrode was appointed a member of the Departmental Committee on Food Preservatives. Dr. Theodore Thomson has been engaged on a special inquiry into the sanitary state of Dublin, an investigation undertaken at the instance of the Lord Lieutenant of Ireland. Mr. Power, as a member of the General Medical Council appointed by the Crown, has also had some of his time occupied by attending the deliberations of that body "so far as his office duties have permitted." The way in which the services of these medical officers have been sought to carry out duties not strictly within their province shows that their abilities, their industry, and their training are appreciated when serious work is wanted.

The report of the principal medical officer is followed by three appendices. Appendix A contains a digest of the vaccination officers' returns with regard to children whose births were registered in the year 1898, together with five other reports concerning vaccination (pp. 1 to 60). This is followed by a summary of the work of the medical inspectors during the year 1900 (p. 61)—an abstract of medical inspections made in 1900 with regard to the incidence of disease in particular places and to questions concerning local sanitary administration (p. 67). A series of special reports made by Dr. S. Monckton Copeman (p. 77), Dr. R. J. Reece (p. 98), Dr. S. W. Wheaton (p. 113), Dr. F. St. George Mivart (p. 126), Dr. R. W. Johnstone (p. 149), and Dr. E. Petronell Manby (p. 165) respectively serve to show the manner in which the work of local inspection is carried out. Statistical details are given in regard to certain notified infectious diseases in 94 urban districts quarter by quarter and for the whole year 1900 (p. 176), and similar details are given in regard to each of the sanitary areas within the administrative county of London and in the county as a whole week by week, quarter by quarter, and for the whole year 1900 (p. 186).

The memoranda prepared or revised in the medical departments during 1900 are printed *in extenso* (pp. 228-257). Of these memoranda there are seven. 1. On the Provision of Isolation Hospital Accommodation by Local Authorities, revised August, 1900. This is a most useful document, clearly written, and illustrated by plans showing how such hospitals should be built. 2. Plague Memorandum, prepared September, 1900. This memorandum deals with: (i.) administrative considerations; (ii.) symptoms of plague; (iii.) directions for the use of the Haffkine plague prophylactic; (iv.) directions for obtaining and forwarding for bacteriological examination material from suspected plague cases from the living person and from the dead body; (v.) a general memorandum on the proceedings which are advisable in places attacked or threatened by epidemic disease; (vi.) a memorandum as to the annual reports of medical officers of health (London) and an extract from the Order of the Local Government Board dated Dec. 8th, 1891, on the duties of a medical officer of health as regards the district or part of a district for which he is appointed; and (vii.) a memorandum as to annual reports of medical officers of health in the provinces and an extract from the Order of the Local Government Board, dated March 23rd, 1891, as to the duties of a medical officer of health. These two last-mentioned memoranda should prove of great use. Many medical officers of health, especially in rural districts, have entered upon their duties without having had much previous knowledge of, or special training in, matters pertaining to public health, and a considerable proportion of those living in the country have consequently been somewhat at a loss to understand what their exact duties are. The memorandum will be of the greatest service to these officers, for it deals not only with the nature of the duties which they are called upon to perform, but gives admirable directions as to the best mode of doing them.

A report by Dr. Parsons on Geological Considerations in relation to Public Health and Sanitary Administration (p. 258) is a useful result of his investigation of the Survey Department, for it shows conclusively and in a short space the very great practical importance of geological conditions in their bearing on hygiene.

The two next appendices are the work of Dr. R. Bruce Low. Of these the first gives a summary of the Progress of Diffusion of Plague in 1900 (p. 264) and the second is a memorandum on Plague in England and Wales during 1900 and on certain precautionary measures employed to prevent the importation and spread of the disease (p. 283). These reports necessarily lose some of their interest from the delay which has occurred in their publication, for it already seems quite ancient history to recall the plague visitation of 1900. The scare which generally affected the inhabitants of the English seaports has not been without its uses, for it has undoubtedly led many of the port sanitary authorities to effect improvements which without the spur of some unusual excitement might have been longer delayed. The last report of the series, which is by Dr. Thomson, gives an account of the general sanitary administration in some of the ports and riparian districts (p. 294), and as a result of his very careful investigation it is evident that many of the places which he visited were, and some probably still are, in a state which reflects great discredit on the local sanitary authorities.

The second appendix (Appendix B, p. 295-581) contains the reports of special investigations undertaken to determine some points in regard to the spread of preventable disease There are in all eight reports which show the results of the work done by Dr. E. Klein, Dr. A. C. Houston, Dr. M. H Gordon, Dr. Sidney Martin, and Dr. J. S. Haldane. The questions dealt with include studies on the spread of disease by means of certain articles of food, a report on the bacteriology of scarlet fever, a note on the destruction of rats on board ship, and an important series of investigations dealing with the inoculation of soil with sewage, the nature of the antagonism of the soil to the typhoid bacillus, and on the chemical and bacteriological examination of the water of Chichester. Chichester, it will be remembered, is a city which for years has supplied a constant field for the study of the etiology of typhoid fever and has already engaged the attention of more than one member of the Medical Department of the Local Government Board.

The third appendix (Appendix C, p. 609) contains reports by Dr. F. R. Blaxall, Mr. H. S. Fremlin, and Dr. Alan B. Green on research work in connexion with glycerinated calf lymph. Mr. Power in his introductory remarks to this part of the work of his medical staff explains that they habitually test the efficiency of the glycerine process as used at the lymph laboratories for the purpose of eliminating from the successive series of lymphs which are undergoing the process of maturation those extraneous micro-organisms which are commonly associated with lymph as collected from the calf. They have also done much work in gaining a knowledge of the bacteria of vaccine lymph and of the methods necessary for the detection, the isolation, and the identification of these organisms. They have closely studied the condition of "lymph glycerination." Finally, they have searched for "agencies other than glycerine more competent than that medium to eliminate from the lymph extraneous micro-organisms and free also from that ultimately deleterious effect on the activity of vaccine which is apt to result from long sustained association of the lymph with the glycerine" (p. xxxiii.).

In their reports Dr. Blaxall and Mr. Fremlin refer to the "Report of THE LANCET Special Commission on Glycerinated Calf Vaccine Lymphs"[1] (pp. 610, 611, 616), with the results of which they are not in accord. The experiments which they have carried out and of which details are given lead them to believe: 1. That glycerinated calf lymph contains no organisms which can be described as anaerobic—that is, none which are capable of growth under strict anaerobic conditions and incapable of growth under aerobic conditions. 2. That all the extraneous organisms are facultative anaerobes, that is, can grow under either aerobic or anaerobic conditions, with the single exception of bacillus subtilis which is well known to be an obligatory aerobe. 3. That the extraneous organisms grow equally well under aerobic and anaerobic conditions, in equal numbers and with colonies of similar appearance, with the exception that under anaerobic conditions produced by hydrogen the development of definite pigments is to a large extent lost. 4. That glycerinated calf lymph contains no spore-bearing organisms, aerobic or anaerobic, capable of growth on the various media used, other than the members of the mesenteric group commonly met with. 5. That in glycerinated calf lymph there are frequently present bacilli which often escape notice in ordinary plate cultivations. They are usually few in number, and probably occur only in the original plate, where, many colonies being crowded together and more or less ill-developed, they have no opportunity of displaying their characteristic form and consequently are missed. But these bacilli, which belong to the

[1] THE LANCET, April 28th, 1900, p. 1227.

proteus group, and very closely resemble proteus vulgaris, when placed in suitable media such as beef broth, and cultivated either aerobically or anaerobically, grow luxuriantly and multiply much more rapidly than do the staphylococci.

Dr. Blaxall has made a series of experiments on the effect of heat on the activity of crude calf lymph and on the contained extraneous organisms which it contains. The results of his investigation, he believes, show: (1) that it is possible for the vaccine organism to withstand a comparatively high temperature, 57·5° C., for five minutes without loss of potency; (2) that the lethal point is a very exact one—all the lymph gave good results after exposure for five minutes to a temperature of 57·5° C., and all failed entirely after exposure for the same time to a temperature of 60° C. (at 58·5° C. only a feeble result was obtained or none); and (3) that there appears to be, on the part of the vaccine organism, a greater power of withstanding the effects of high temperature than that possessed by the extraneous organisms.

Dr. Alan B. Green has made a series of experiments on the disinfectant action of chloroform and of various other substances on the specific and extraneous organisms of vaccine (pp. 639, 663). The conclusions at which he has arrived are that the "specific vaccine virus can withstand the action of several substances besides glycerine which kill in part or wholly the extraneous organisms; in other words, that these substances appear to have a selective germicidal action on the micro-organism of crude calf lymph. Of these substances chloroform employed in a saturated watery solution is the most important. Under its action the extraneous micro-organisms of crude calf lymph have been, as a rule, eliminated in from 24 hours to seven days, and the specific organisms have survived in every case as long as have the specific organisms in the glycerine "control" experiments, and in some cases for a longer period. The experiments which have shown these results have up to the present time not been very numerous (20 or 30 in all), and Dr. Green advises that his investigations should be continued as there is *prima facie* evidence that the use of chloroform in the preparation of vaccine might prove of considerable value. Mr. Power is evidently impressed with the importance of this research, for he concludes his report by commenting on it in terms full of hope. "It affords prospect," he says, "of an agency in lymph manufacture not only more potent than glycerine as a germicide of extraneous micro-organisms, but also considerably less deleterious than that substance in later antagonistic influence on the activity of the vaccine lymph after it has passed from the Board's establishment into the hands of the public vaccinators."

ARMY MEDICAL REPORT FOR 1900.[1]

CONCLUDING NOTICE.[2]

CONFINING our attention to a few of the statistical results and salient points of this report we are glad to notice that, taking all forms of venereal diseases together, there was a decline in the ratios for 1900 among the troops serving in the United Kingdom as compared with those of the year before and with the average of the preceding 10 years.

The number of invalids discharged the service in the course of the year 1900 on account of medical unfitness for further service was 5074, which gives a higher ratio per 1000 than in the previous year or than the average for the preceding 10 years. This number includes 475 men who had returned from the South African field force invalided for disabilities contracted in the campaign. The full statistics, reserved for record at the conclusion of the war, ought soon to be in our hands. Among the officers serving at home, whose average strength is given as 1329, we note that there were 16 deaths, giving a ratio of mortality of 4·0 per 1000. Influenza caused 260 admissions (one fatal) and there were five cases of enteric fever (1·2 per 1000) and no deaths.

The average strength of women borne on the army in the United Kingdom in 1900 was 9148, of whom 53 died. The ratio of sickness among them was 428·0 per 1000, and that of mortality 5·79, in both respects somewhat higher than in the returns for the previous year. The average strength of the children borne on the army at home in 1900 was 18,156, with a sick-rate of 560·8 and a death-rate of 20·82 per 1000, in both respects also somewhat higher than for the preceding year.

As regards recruiting, we learn that the total number of recruits inspected during the year was 84,402. Of these 23,105 were rejected as unfit. Including, however, those subsequently discharged within three months as unfit for service the total number of rejections equalled 23,745, or a ratio of 281·33 per 1000. The facts connected with recruiting and the causes of rejection are set forth, as usual, with much laborious detail.

There is nothing that strikes us as particularly new in the reports on the sanitary conditions of the different military districts and stations of the United Kingdom. At Golden Hill Fort, Isle of Wight, we notice that a septic tank system of sewage disposal has been installed and has been in use for about a year at Warden Battery. It is said to have required little or no attention. At Netley it is reported that defects were discovered in connexion with the flushing of the water-closets, the fittings and pipes of which were destroyed by the chlorinated water produced by the Hermite process. At the Royal Military Academy, Woolwich, it is remarked that two large corrugated iron huts had been erected to afford increased hospital accommodation and the need of another similar hut for infectious cases had been represented. (Is there not accommodation available for this purpose at the Herbert Hospital?) Passing over the Mediterranean stations and coming to the sanitary report for Bermuda we notice that the main feature of the decline of enteric fever at that station is its coincidence with the gradual replacement of the dry-earth system conservancy by a water-carriage system. The need of a destructor for burning ashbin refuse and the provision of a modern and efficient disinfector for hospital use are pointed out. We have already touched upon Mauritius, but seeing that plague occupies a place in the public health returns received from this colony, we may add that the town of Port Louis is stated to be insanitary, the barracks are old-fashioned, defective, and unsuitable, and the surroundings are objectionable. According to the report the town is saturated with the filth of ages and badly drained. The soldier is the chief sufferer, as his residence there is at present compulsory. Both sick and and non-effective ratio would, it is alleged, be surprisingly reduced if Port Louis ceased to be occupied altogether or if its garrison were reduced to the utmost possible extent.

It will be remembered that a large number of Boer prisoners of war were deported to Ceylon. Two large camps, the report tells us, were established for them at Diyatalawa. The sanitary arrangements of these camps were carefully worked out with most satisfactory results.

Passing on to the long and elaborate report "on the health of European troops serving in India," we find that during 1900 there was a decrease of 7144 in the strength of these troops as compared with 1899, mainly caused—but not entirely, for there were other contributory causes—by the non-replacement of the troops sent to South Africa in that year.

The following table shows the admission, death, invaliding, and constantly-sick rates among the troops in India during 1900:—

Average strength for 1900.	Admissions.	Deaths.			Invalids.		Average constantly sick.	Ratio per 1000 of strength.				
		In the command.	Of invalids.	Total.	Sent home.	Finally discharged.		Admissions.	Deaths.	Invalids sent home.	Invalids finally discharged.	Constantly sick.
60,553	69,225	885	45	930	2026	677	4,342·21	1,143·2	15·36	33·46	11·18	71·71

As regards enteric fever, the most notable fact about it is the decrease in the prevalence of this disease among the troops in 1900—a decrease in the average number of men constantly sick, which, as compared with the preceding year, amounts

[1] Army Medical Department Report for the year 1900, with appendix. Vol. XLII. London: Printed for His Majesty's Stationery Office by Harrison and Sons, St. Martin's-lane, Printers-in-ordinary to His Majesty. 1902. Price 2*s.* 3*d.*

[2] The first notice was published in THE LANCET of August 9th, p. 398.

to 72·50. At page 153 of the report there is a table which sets forth the results in figures of enteric fever in 1899 and 1900 respectively. It is well known what a terrible scourge this fever has for many years past proved to be to the British army serving in India; and as far as the mortality is concerned, enteric fever in 1900 still gave rise to 32·65 per cent. of the total death-rate from all causes as compared with 40·32 per cent. in 1899. Statistically speaking, however, there was a great diminution in the admission and mortality ratios for enteric fever in the Bengal and Punjab commands, though the case-mortality was high, being 29·8 per cent. of those attacked. The admission and mortality rates for 1900 are both lower than for any year since 1888. The disease was general and not confined to particular stations. A severe outbreak at Quetta was the chief cause of the increased admission and mortality rates in the Bombay command. While the decreased number of admissions for enteric fever in India during 1900 is mainly, as well as in our opinion rightly, attributed at page 159 of the report to the suspension of the trooping system and the consequent absence of drafts of specially susceptible material, it is nevertheless right to add that this fact does not wholly account for the decreased prevalence of enteric fever. Reasons are assigned for believing that the decrease was partly due to more satisfactory causes than the absence merely of susceptible men. Almost all the points connected with the causation of enteric fever in India are noticed. The exhaustive and carefully-considered article by Major T. C. McCulloch, R.A.M.C., on Enteric Fever amongst the British Troops in India, published in the Appendix, should be read in connexion with this subject. What he adduces in regard to the relative prevalence of this fever in the cavalry as compared with other arms of the service is new and interesting. Munson, in his work on "Military Hygiene," has also pointed out the much greater prevalence of enteric fever among the cavalry of the United States Army.

One thing seems to us quite clear—namely, that we are still far from having exhausted all the points connected with the etiology and causation of typhoid fever in armies. It is all very well arbitrarily to take up some one particular view and, because it can, for instance, be shown to be a water-borne disease, to say that *that* is the sole and exclusive source of its spread, but is it the correct view? There are too many people who simply content themselves with mentally affixing "water-borne" to this form of fever as if it were a label which both described its nature and causes and the only vehicle through which its infection was spread. No account is taken of the influence of direct infection, fouled soil, dust storms, and insectivorous agency in the spread of the disease in tropical and sub-tropical climates. Sir William Taylor, when principal medical officer in India, was simply repeating the results of the previous experience of others when he reported in 1898, "The liability of troops on service to enteric fever, even when encamped on what appears to be virgin soil, is a fact in regard to which almost all observers are unanimous, and a considerable part of the increase in both the admission and mortality rates for 1898 can be accounted for by field service." He goes on to say that the disease is endemic in most military stations in India, that cases may come from all parts of barracks, and that even when it assumes an epidemic form it is often impossible with any degree of certainty to trace the disease to specific contamination of water, milk, food, or air; and he adds that the enteric fever bacillus may be more widely distributed than our present knowledge leads us to suppose. We know much more now than we did about the length of time during which the typhoid bacillus may remain in the tissues of the body whilst still retaining its potential activity and more also about the conditions under which the bacillus can exist outside the body. The part which the urine may play in the spread of infection is also a very important and persistent factor which has not been, and is not even now, sufficiently taken into account. It is in all probability a fertile means of spreading the disease seeing that the specific bacilli are often to be found in it in enormous numbers. We have in the previous article called attention to the exhaustive and elaborate Report of the Commission on the Typhoid Fever Epidemics in the Camps of the United States Army in 1898. Ample opportunities were afforded to the commission owing to the widespread prevalence of this fever (more than 90 per cent of the regiments developed typhoid fever within eight weeks of going into camp) for going into the whole subject from a many-sided and all-round point of view. The commission certainly seems to have spared no pains in order to discover the origin of the disease and to trace out the various ways and channels by which the infection was spread in the various encampments. But our great point in calling attention to this American report is, as we have already said, its very important bearing and the new and strong light which it throws on the typhoid fever of armies. The causation of this disease is *the* question of the day for the army sanitarian.

Among the articles in the Appendix many call for notice which only want of space prevents us from giving, but we must call attention to the report on the Progress of Hygiene for the year 1900-1901, contributed by Major R. H. Firth, R.A.M.C., the present professor of military hygiene at the Army Medical School, Netley. It is an excellent and most useful record, the materials for which have been judiciously selected and put together and commented upon in an interesting and instructive way. This is followed by a report giving a list of operations at the Royal Victoria Hospital in 1900-1901, with notes on some of the operation cases and remarks on some of the work done in the surgical division, by Major W. Dick, R.A.M.C., the assistant professor of military surgery. In the Appendix will also be found the first annual report of the Pasteur Institute in India by Major D. Semple, R.A.M.C.; the instructions concerning army railway ambulance carriages (with diagram); and the tables showing the results of preventive inoculation against enteric fever during 1900. These tables and the remarks submitted by the principal medical officer of India on the figures connected with the inoculations in that country are somewhat intricate and do not readily lend themselves to any brief statement and analysis.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On Prevalence of Throat Illness in and near the Ditcham Park Estate in the Catherington and Petersfield Rural Districts of Hampshire, by Dr. L. W. DARRA MAIR.[1]—Small outbreaks of infectious disease in sparsely populated districts are worthy of careful study from the view-point of epidemiology. In such circumstances it is often possible to trace infection to a common cause or causes with greater certainty than in populous neighbourhoods. Dr. Mair's report deals with "throat illness" which prevailed between April and August of last year among the inhabitants of some 20 dwellings scattered about the Ditcham Park Estate in Hampshire to an extent which caused the owner of the estate to make a strong appeal for inquiry to the Local Government Board. The illness was in different instances diagnosed as scarlet fever, diphtheria, and quinsy. Excluding two doubtful cases 22 persons living in 10 houses were attacked during the period. In several the illness was severe, and two cases were fatal.

Dr. Mair devotes the greater part of the report to a statement of the information which he obtained from medical practitioners concerned and from personal inquiry of the inhabitants at each of the dwellings affected. He then sums up the evidence and concludes that two distinct infections were operative: scarlet fever, with distinctive rash, which attacked six cases in two dwellings; and "sore-throat illness," without scarlatinal rash, which attacked 16 cases in eight dwellings. Scarlet fever without rash is not uncommon, but, as Dr. Mair points out, if the disease in these eight houses had been scarlet fever it is most improbable that no rash would have been manifested in any of the 16 cases. Moreover, all the eight households concerned contributed children to the small school which serves the estate and which afforded several opportunities of infection, whereas the two scarlet fever households had no relation with this school. The evidence that the "sore-throat illness" was diphtheria, however, had a

[1] London: Eyre and Spottiswoode, East Harding-street; Edin Oliver and Boyd; Dublin: E Ponsonby. Price 3d.

great deal in its favour, particularly the fact of the severity of the illness in some cases and the occurrence of two deaths out of the 16. On the other hand, no diphtheria bacilli were found in single specimens of throat swabs from two cases taken at the end of the epidemic.

The interest of these observations lies in the fact that the introduction of these illnesses at Ditcham Park can be referred with a considerable degree of certainty to a single case. A family named Case went from Portsmouth to live at Ditcham Park on April 11th, leaving at Portsmouth Isolation Hospital a child suffering from scarlet fever. This child left hospital and went to her new home on May 23rd. A week before, May 17th, her convalescence had been interrupted by a slight attack of adenitis, and about that time several cases of post-scarlatinal diphtheria had occurred in the hospital. The circumstantial evidence which suggests that the return of this child was the starting-point of both infections in Ditcham Park, the scarlet fever series and also the "sore-throat" series, is fairly strong, and in Dr. Mair's view an assumption that on discharge from hospital this child not only retained scarlatinal infection (in other words, was capable of producing the familiar "return case") but also retained "infectious sore-throat," or diphtheria, infection, would afford a consistent explanation of a sequence of events not otherwise easily capable of elucidation. Dr. Mair refers, however, to two elements of uncertainty: one that the other Case children, all of whom had previously suffered from scarlet fever, developed neither scarlet fever nor "sore-throat illness" on return of their sister; and the other, that in the scarlet fever series the possibility of infection through washing scarlet fever infected clothes brought from Portsmouth to Ditcham could not be altogether excluded. In this connexion he criticises the practice adopted at Portsmouth of making a charge of 5s. and upwards for disinfection of bedding and clothing from infected premises. The report as a whole affords a suggestive contribution to the difficult question of "mixed infections."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 9568 births and 4419 deaths were registered during the week ending August 16th. The annual rate of mortality in these towns, which had been 14·1 and 13·6 per 1000 in the two preceding weeks, rose again last week to 15·5 per 1000. In London the death-rate was 15·8 per 1000, while it averaged 15·4 in the 75 other large towns. The lowest death-rates in these towns were 5·6 in Handsworth, 7·6 in Bournemouth and in Wolverhampton, 8·0 in Warrington, 9·0 in Hornsey, 9·7 in Southampton, 9·8 in Tottenham, and 9·9 in Plymouth and in Stockport; the highest rates were 19·4 in Gateshead, 19·5 in Wigan and in Middlesbrough, 19·7 in South Shields, 21·3 in Liverpool, 20·2 in Tynemouth, 22·2 in Stockton-on-Tees, and 22·3 in Wallasey. The 4419 deaths in these towns last week included 642 which were referred to the principal infectious diseases, against 552, 579, and 584 in the three preceding weeks; of these 642 deaths 245 resulted from diarrhœa, 114 from measles, 104 from whooping-cough, 70 from diphtheria, 52 from scarlet fever, 48 from "fever" (principally enteric), and nine from small-pox. No death from any of these diseases was registered last week in Hornsey, Hastings, Southampton, Great Yarmouth, Handsworth, Smethwick, Bury, Newport (Mon.), or Swansea; while they caused the highest death-rates in West Ham, Norwich, Bristol, Hanley, West Bromwich, Bootle, and Rhondda. The greatest proportional mortality from measles occurred in West Ham, Bristol, Walsall, Stockton-on-Tees, West Hartlepool, Gateshead, Cardiff, and Rhondda; from scarlet fever in West Bromwich and King's Norton; from diphtheria in Willesden; from whooping-cough in Leyton, Portsmouth, Norwich, and Birkenhead; from "fever" in Grimsby and Rhondda; and from diarrhœa in Reading, Norwich, Bootle, St. Helen's, and Rhondda. Nine fatal cases of small-pox belonging to the 76 large towns were registered last week; of these, five belonged to London and one each to West Ham, Leyton, Walthamstow, and Liverpool. There were 170 small-pox patients under treatment in the Metropolitan Asylums hospitals on Saturday, August 16th, against numbers declining from 1515 to 239 on the 16 preceding Saturdays; 24 new cases were admitted during the week, against 23, 44, and 21 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 2486, 2562, and 2591 at the end of the three preceding weeks, had further increased to 2595 at the end of last week; 303 new cases were admitted during the week, against 397, 382, and 295 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 128, 135, and 131 in the three preceding weeks, rose again last week to 159, and were 8 above the corrected average number. The causes of 41, or 0·9 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Salford, Bradford, Newcastle, and in 47 other smaller towns; the largest proportions of uncertified deaths were registered in Norwich, Hanley, St. Helens, Preston, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 16·6 and 13·9 per 1000 in the two preceding weeks, rose again to 15·7 per 1000 during the week ending Saturday, August 16th, and exceeded by 0·2 per 1000 the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·9 in Leith and 14·1 in Dundee and in Perth to 19·2 in Paisley and 21·2 in Greenock. The 507 deaths in these towns included 25 which resulted from whooping-cough, 23 from diarrhœa, nine from measles, five from "fever," one from scarlet fever, and one from diphtheria, but not one from small-pox. In all, 64 deaths resulted from these principal infectious diseases last week, against 48 and 46 in the two preceding weeks. These 64 deaths were equal to an annual rate of 2·0 per 1000, which was 0·3 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been seven and 16 in the two preceding weeks, increased last week to 25, of which 14 occurred in Glasgow, five in Aberdeen, two in Edinburgh, two in Dundee, and two in Leith. The deaths from diarrhœa, which had been 21, 19, and 16 in the three preceding weeks, rose again to 23 last week, and included 11 in Glasgow, four in Aberdeen, three in Edinburgh, two in Dundee, and two in Leith. The fatal cases of measles, which had been 12 and five in the two preceding weeks, increased again last week to nine, of which five were registered in Paisley, two in Glasgow, and two in Edinburgh. The deaths referred to different forms of "fever," which had been three and four in the two preceding weeks, further rose to five last week, and included two in Glasgow and two in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 80, 79, and 63 in the three preceding weeks, rose again last week, and were 20 in excess of the number in the corresponding period of last year. The causes of 17, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·2 and 20·2 per 1000 in the two preceding weeks, futher declined to 19·5 per 1000 during the week ending August 16th. During the past four weeks the death-rate has averaged 20·3 per 1000, the rates during the same period being 14·2 in London and 15·6 in Edinburgh. The 142 deaths of persons belonging to Dublin registered last week showed a decline of five from the number in the preceding week and included 24 which were referred to the principal infectious diseases, against 15, 29, and 30 in the three preceding weeks; of these 20 resulted from measles, two from "fever," one from scarlet fever, and one from diarrhœa, but not one from either small-pox, diphtheria, or whooping-cough. These 24 deaths were equal to an annual rate of 3·3 per 1000, the mean death-rate last week from the same diseases being 3·0 in London and 1·5 in Edinburgh. The fatal cases of measles, which had been eight, 18, and 20 in the three preceding weeks, were again 20 last week. The deaths from "fever," which had been two and four in the two preceding weeks, further declined last week to two. The 142 deaths in Dublin last week included 27 of children under one year of age and 29 of persons aged upwards of 60 years; the deaths both of

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1902.

(Specially compiled for THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1902.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,579,107	241	1876	1064	1	438	8	25	465	1	4119	9·4	52	177	49	110	203	—	68	—	222	881	2·0	6039	13·8	108
West Districts.																										
Paddington	145,107	5	34	26	—	15	—	2	16	-	98	7·0	–	–	–	2	–	–	2	–	6	10	0·7	134	9·6	62
Kensington	177,605	8	32	22	–	16	–	3	19	—	100	5·9	—	5	—	2	1	—	4	—	9	21	1·2	197	11·6	116
Hammersmith	114,210	6	31	23	–	8	—	1	10	—	79	7·2	4	5	1	2	4	—	2	—	9	27	2·5	149	13·6	116
Fulham	143,102	1	43	42	–	8	—	—	13	—	107	7·8	—	6	3	4	9	–	1	—	21	44	3·2	192	14·0	139
Chelsea	74,018	1	22	10	—	2	—	3	7	-	45	6·3	1	2	1	—	3	—	—	—	2	9	1·3	100	14·1	103
City of Westminster	180,800	2	48	39	–	12	—	—	14	—	115	6·6	—	5	2	7	2	–	1	–	4	21	1·2	255	14·7	153
North Districts.																										
St. Marylebone	132,069	1	52	33	–	18	–	2	15	-	121	9·6	—	3	1	4	1	-	3	–	8	20	1·6	177	14·0	72
Hampstead	83,743	—	29	16	-	3	–	2	2	—	52	6·5	—	1	—	1	—	–	1	–	2	5	0·6	63	7·8	45
St. Pancras	235,596	16	140	78	–	17	1	—	22	—	274	12·1	9	12	4	7	11	–	1	–	3	47	2·1	338	15·0	115
Islington	337,268	9	116	76	—	40	—	-	26	—	267	8·3	4	9	—	5	14	—	2	–	5	39	1·2	402	12·4	115
Stoke Newington	51,700	2	13	11	—	2	—	—	2	-	30	6·1	—	1	—	—	3	–	2	—	3	9	1·8	48	9·7	102
Hackney	221,926	3	90	49	–	19	1	2	32	–	196	9·2	1	8	1	4	10	–	4	–	14	42	2·0	265	12·5	74
Central Districts.																										
Holborn	58,535	2	35	10	—	6	—	1	6	—	60	10·7	—	1	—	—	5	—	2	–	2	10	1·8	93	16·6	46
Finsbury	100,487	38	40	34	–	17	—	2	8	–	139	14·4	6	7	1	5	7	–	2	–	10	38	3·9	193	20·0	117
City of London	25,598	5	8	17	–	—	—	—	3	—	33	13·4	—	2	—	3	—	–	—	–	1	6	2·4	53	21·6	152
East Districts.																										
Shoreditch	117,980	3	29	24	–	12	2	2	12	—	84	7·4	1	8	3	3	6	–	2	–	7	30	2·7	187	16·5	148
Bethnal Green	129,889	20	57	23	–	19	–	1	28	–	148	11·9	1	4	1	3	9	–	2	—	10	30	2·4	205	16·5	146
Stepney	300,551	23	119	78	—	38	—	—	53	–	311	10·8	7	18	5	6	17	—	8	–	24	85	2·9	504	17·5	131
Poplar	169,214	9	66	34	–	24	–	1	18	–	152	9·4	3	4	1	3	16	—	4	–	15	46	2·8	251	15·5	129
South Districts.																										
Southwark	206,825	6	130	70	—	31	—	—	23	-	260	13·1	3	24	5	9	14	–	3	-	11	69	3·5	385	19·4	129
Bermondsey	130,218	7	61	32	-	14	1	—	20	–	135	10·8	—	15	2	3	6	—	2	—	8	36	2·9	219	17·5	117
Lambeth	305,102	11	177	44	—	26	3	—	26	1	288	9·8	1	3	4	6	11	–	4	—	12	41	1·4	386	13·2	82
Battersea	171,401	18	71	33	—	14	–	—	17	–	153	9·3	1	9	2	2	6	-	1	—	4	24	1·5	183	11·1	93
Wandsworth	241,810	7	81	71	–	18	—	—	23	–	200	8·6	1	12	2	4	6	—	4	—	11	40	1·7	245	10·6	85
Camberwell	262,775	17	141	74	1	24	—	1	18	–	276	11·0	3	7	3	15	14	-	6	–	12	60	2·4	306	12·1	116
Deptford	111,577	6	64	19	—	10	—	—	17	—	116	10·8	—	2	1	1	7	—	1	–	5	17	1·6	143	13·4	99
Greenwich	98,013	7	64	12	—	2	—	—	5	-	90	9·6	1	—	1	—	3	—	—	–	3	8	0·9	84	8·9	61
Lewisham	132,432	2	55	40	—	7	—	1	6	–	111	8·7	3	2	2	5	10	—	2	—	2	26	2·0	138	10·9	90
Woolwich	119,556	6	28	24	—	11	—	1	4	–	74	6·5	2	2	3	4	8	—	2	—	—	21	1·8	145	12·6	103
Port of London	–	—	—	—	—	5	—	—	—	–	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

infants and of elderly persons showed a slight decline from the number in the preceding week. Six inquest cases and three deaths from violence were registered; and 65, or nearly one-half, of the deaths occurred in public institutions. The causes of 8, or nearly 6 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING JULY, 1902.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 9·4 per 1000 of the population, estimated at 4,579,107 persons in the middle of the year. In the three preceding months the rates had been 10·5, 10·3, and 10·0 per 1000 respectively. The rates were considerably below the average in Kensington, Chelsea, Hampstead, Stoke Newington, and Woolwich, while they showed the largest excess in St. Pancras, Finsbury, the City of London, Bethnal Green, and Southwark. The prevalence of small-pox, which had been declining during the four preceding months, showed a further considerable diminution in July; among the various metropolitan boroughs this disease was proportionally most prevalent in St. Pancras, Finsbury, City of London, Bethnal Green, Stepney, Battersea, and Greenwich. The Metropolitan Asylums hospitals contained 305 small-pox patients at the end of last month, against 1442, 1274, and 837 at the end of the three preceding months; the weekly admissions averaged 45, against 319, 260, and 145 in the three preceding months. The prevalence of scarlet fever during the month under notice showed a slight excess over that recorded in the preceding month; the greatest proportional prevalence of this disease occurred in St. Pancras, Holborn, Southwark, Lambeth, Deptford, and Greenwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums hospitals, which had been 2176, 2222, and 2439 at the end of the three preceding months, had further risen to 2515 at the end of July; the weekly admissions averaged 322, against 258, 274, and 251 in the three preceding months. Diphtheria showed a slightly increased prevalence during July as compared with that recorded in recent months; among the various metropolitan boroughs this disease was proportionally most prevalent in St. Pancras, Finsbury, the City of London, Southwark, and Lewisham. There were 1008 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 1035, 960, and 975 at the end of the three preceding months; the weekly admissions averaged 165, against 140, 146, and 152 in the three preceding months. The prevalence of enteric fever last month showed a marked excess over that recorded in any of the previous months of this year; the greatest proportional prevalence of this disease occurred in St. Marylebone, Finsbury, Bethnal Green, Poplar, and Southwark. The number of enteric fever patients in the Metropolitan Asylums hospitals, which had been 115, 127, and 195 at the end of the three preceding months, had further risen to 289 at the end of July; the weekly admissions averaged 49, against 17, 19, and 38 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Bethnal Green, Stepney, Bermondsey, and Deptford. The 25 cases of puerperal fever notified during the month included three in Kensington, three in Chelsea, and two each in Paddington, St. Marylebone, Hampstead, Hackney, Finsbury, and Shoreditch.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in public institutions having been distributed among the various boroughs in which the deceased persons had previously resided. During the five weeks ending August 2nd the deaths of 6039 persons belonging to London were registered, equal to an annual rate of 13·8 per 1000, against 16·8, 15·9, and 13·9 in the three preceding months. The lowest death-rates last month in the various metropolitan boroughs were 7·8 in Hampstead, 8·9 in Greenwich, 9·6 in Paddington, 9·7 in Stoke Newington, 10·6 in Wandsworth, and 10·9 in Lewisham; the highest rates were 16·6 in Holborn, 17·5 in Stepney and in Bermondsey, 19·4 in Southwark, 20·0 in Finsbury, and 21·6 in the City of London. The 6039 deaths from all causes included 881 which were referred to the principal infectious diseases; of these 52 resulted from small-pox, 177 from measles, 49 from scarlet fever, 110 from diphtheria, 203 from whooping-cough, 68 from enteric fever, and 222 from diarrhœa. The lowest death-rates from these diseases were recorded in Paddington, Kensington, Westminster, Hampstead, Islington, and Greenwich, and the highest rates in Fulham, Finsbury, Stepney, Poplar, Southwark, and Bermondsey. The 52 fatal cases of small-pox showed a decline of 47 from the number in the preceding month; the greatest proportional mortality from this disease occurred in Hammersmith, St. Pancras, Finsbury, Stepney, and Lewisham. The 177 deaths from measles were 86 below the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Finsbury, the City of London, Shoreditch, Stepney, Southwark, and Bermondsey. The 49 fatal cases of scarlet fever showed a decline of 39 from the corrected average number; the greatest proportional mortality from this disease occurred in Fulham, St. Pancras, Shoreditch, Southwark, and Woolwich. The 110 deaths from diphtheria were 95 less than the average in the corresponding weeks of the years 1892–1901; among the various metropolitan boroughs diphtheria was proportionally most fatal in Westminster, Finsbury, the City of London, Southwark, Camberwell, and Lewisham. The 203 fatal cases of whooping-cough exceeded the corrected average number by 27; the highest proportional mortality from this disease occurred in Fulham, Holborn, Finsbury, Bethnal Green, Poplar, and Lewisham. The 68 deaths from enteric fever were considerably in excess of the average number in the corresponding periods of the 10 preceding years; the highest "fever" death-rates last month were recorded in Kensington, St. Marylebone, Stoke Newington, Holborn, Stepney, and Poplar. The 222 fatal cases of diarrhœa were only about one-fifth of the corrected average number; the greatest proportional mortality from this disease occurred in Hammersmith, Fulham, Finsbury, Bethnal Green, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was nearly 53 per cent. below the average.

Infant mortality in London during July, measured by the proportion of deaths of children under one year of age to registered births, was equal to 108 per 1000. The lowest rates of infant mortality were recorded in Paddington, St. Marylebone, Hampstead, Hackney, Holborn, and Greenwich; and the highest rates in Fulham, Westminster, the City of London, Shoreditch, Bethnal Green, and Stepney.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified.—Surgeons: W. Keith to the *Devastation* and H. V. Wells to the *Hogue*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel E. O. Wight takes over charge of the Station Hospital, Devonport, from Lieutenant-Colonel G. Coutts, who proceeds to Salisbury Plain as staff officer to Surgeon-General G. J. H. Evatt, P.M.O., Second Army Corps. Lieutenant-Colonel H. Charlesworth, C.M.G., is appointed to succeed Surgeon-General W. G. Don at the depôt of the London Recruiting District, and Lieutenant-Colonel J. Latchford (retired) is appointed medical officer in the Dublin Recruiting District.

IMPERIAL YEOMANRY.

The undermentioned officer resigns his commission and receives a new commission subject to the provisions of the Militia and Yeomanry Act, 1901, retaining his present rank and seniority, viz.:—

Staffordshire (Queen's Own Royal Regiment): Surgeon-Captain E. W. Welchman.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 4th Durham: Henry William Martyn Strover to be Surgeon-Lieutenant. 1st West Riding of Yorkshire: Surgeon-Captain S. Rumboll to be Surgeon-Major.

Royal Engineers (Volunteers): 2nd West Riding of Yorkshire (Leeds): Joseph Holmes to be Surgeon-Lieutenant.

Submarine Miners: The Severn Division: Surgeon-Captain A. Rees to be Surgeon-Major.

Rifle: 2nd Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Captain N. F. Roberts to be Surgeon-Major. 4th Volunteer Battalion the Devonshire Regiment: Surgeon-Captain F. B. Manning resigns his commission. 1st Volunteer Battalion the Essex Regiment: Surgeon-Captain St. C. B. Shadwell to be Surgeon-Major. 14th Middlesex (Inns of Court): Surgeon-Captain H. M. Ramsay to be Surgeon-Major; Surgeon-Lieutenant F. C. Wallis to be Surgeon-Captain.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The London Companies: Captain H. D. Buss resigns his commission.

VOLUNTEER INFANTRY, BRIGADE BEARER COMPANY.

South Yorkshire: Surgeon-Captain W. K. Clayton, from 1st Volunteer Battalion the King's Own (Yorkshire Light Infantry), to be Surgeon-Captain, and to command under paragraph 55A Volunteer Regulations.

Surgeon-Lieutenant F. J. Sadler, from the 2nd Volunteer Battalion the York and Lancaster Regiment, to be Surgeon-Lieutenant.

VOLUNTEER OFFICERS' DECORATION.

The Volunteer Officers' Decoration has been conferred upon Lieutenant-Colonel Francis Lawrance Stephenson of the Woolwich Companies, Royal Army Medical Corps (Volunteers).

OUTSPOKEN CRITICISM.

The *Archives de Médecine Navale*, an official journal published "by order of the Minister of Marine," contains in its June issue a short article in which Dr. Astius Castellan, who is a naval medical officer of the first class, finds fault very unreservedly with the convalescent depôt for French colonial troops which has been established on the island of Porquerolles. This sanatorium, says the outspoken critic, having been in existence since January, 1898, ought by this time to be organised on a solid basis, but such is far from being the case. In the first place the site that has been pitched on is entirely unsuitable for the purpose. "In this marvellous island," continues Dr. Castellan, "there are several places where the depôt could have been established under far better conditions, amidst the health-bestowing emanations from the pine groves, but instead of that it stands quite close to the village, on a bare hillock destitute of verdure and entirely unshaded. The rooms, professing to accommodate 16 convalescent men in each, are overcrowded; the kitchen is only a kitchen in name, being filthy, full of cobwebs, and shockingly furnished; the latrine, unprovided with water-supply and very imperfectly cleansed, is placed to windward of the cantonment; there are no drains properly so-called, only a few shallow trenches where putrescible matter lies stagnant and rotting in the sun; the pharmacy and dressing-room is so small and dark that it is impossible to examine or dress a patient in it; finally, in the immediate neighbourhood there is a village of some 250 inhabitants in which there are no fewer than seven liquor shops, some of them being suspected of harbouring improper characters.

THE OVERCROWDED TRANSPORTS.

It is not easy to exaggerate the grave importance of the allegations that have been made regarding the disgraceful state of the transports conveying the colonial troops from South Africa to their various destinations. The affair has very naturally and properly given rise to a good deal of feeling in the colonies. A Royal Commission has been appointed, and if the charges that have been advanced are substantiated we can only trust that the blame will be brought home to those concerned.

THE WELSH HOSPITAL.

A handsome brass tablet to the memory of six members of the staff of the Welsh Hospital who died during the recent war in South Africa was unveiled in St. David's Cathedral on August 14th by Lord Penrhyn. The names on the tablet are those of Professor A. W. Hughes, Professor T. Jones, Dr. H. Davies, T. R. Eames (dresser), Marion Lloyd (matron), and Florence L. Sage (nursing sister).

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—In the list of gentlemen admitted on July 31st as Members of the College, published in THE LANCET of August 9th, p. 396, the following name was accidentally omitted:—Andrew Elliot, M.A., M.D. Edin.

Correspondence.

"Audi alteram partem."

THE DUTIES OF A MEDICAL MAN AND THE LAW OF LIBEL.

To the Editors of THE LANCET.

SIRS,—I have read with interest the letter of Dr. Shaw-Mackenzie on the above but must confess that I think he has taken too gloomy a view in respect of the dangers run by medical men in the particular instance he quotes. He states in his letter that publication of a wife's disease to the husband would undoubtedly be sufficient to cause an action to lie against the medical attendant and suggests that an alteration in the law of libel is desirable. It is quite clear from the recorded cases that such a statement made *bonâ fide* by a medical man would be held to be "privileged." Only lately in a case held at Leeds Assizes the learned judge extended the "privilege" in this respect not only to the communication made to the husband but also to the employer and also to the housekeeper in whose employment and under whose domestic care the wife was. Further than this "privilege" can hardly be expected to extend.

I am, Sirs, yours faithfully,

A. GEORGE BATEMAN,
August 18th, 1902. General Secretary, Medical Defence Union.

PATENT FOODS.

To the Editors of THE LANCET.

SIRS,—I have read with much interest the valuable and exhaustive address by Dr. R. Hutchison on Patent Foods published in THE LANCET of July 5th (p. 1). There is one point, however, in respect of somatose that is worthy of note. Dr. Hutchison, after stating that somatose is "a good albumose food and a very rich one, containing 80 per cent. of digested proteid," goes on to say that "if it is given in anything like large quantities it is apt to produce diarrhœa and for that reason its use is seriously restricted in practice."

I do not think that this is a universal experience. I have used somatose more or less since 1897 and I have scarcely ever found that it has produced any diarrhœa, and I am anxious to say a good word for it. I think that it is more than probable that the mode of administration has a great deal to do with the results obtained. It is imperative, in the exhibition of somatose, that it should be administered at first in small doses, but frequently, three, four, or more times in 24 hours, gradually increasing every few days until the full dose is obtained. Another thing is also essential—that is, that it should be in *complete* solution before being swallowed. The only cases in which I have seen slight diarrhœa in the use of somatose are those in which this precaution has been neglected and the substance has been lumpy. I have given somatose in adults in quantities of from three to six drachms per day, and to children from 45 to 90 grains, without any unpleasant effects and with the best results.

In July, 1899, I wrote a small brochure on somatose which appeared in the *Scalpel* during that month. On reference to it I find that I have made no mention of diarrhœa, but, as there stated, it has done me yeoman's service, the great increase of body-weight being astonishing, as much as from two to three pounds having been put on in seven days. Dr. J. L. Landau in *Die Heilkunde*, September, 1898, quotes a series of cases in which he exhibited somatose and he states: "The manner of preparing this solution is deserving of very special consideration. Into a wineglass containing a tablespoonful of water or other medium the desired quantity of somatose is poured and the resulting paste stirred for a few minutes until a *complete solution* is obtained." He further states that when given to children in the following manner—one grammie for the first three days and then increased up to three grammes in eight days—no diarrhœa has occurred. He has also used it in gastro-intestinal cases, where there was persistent loss of appetite, diarrhœa, and vomiting, from one to five grammes of somatose being given at first, gradually increased to eight grammes. As a result, by the second day the stools had

decreased and by the eighth the diarrhœa had altogether ceased.

The experience of many other continental physicians coincides with that of Dr. Landau; indeed, he quotes them frequently in support of his own statements as to the value of somatose, and there can be no doubt that this preparation has been administered in sufficient quantities to produce highly beneficial results. May we not, therefore, be justified in assuming that in those cases in which the results have been unsatisfactory the method of administration of somatose has had more to do with the production of diarrhœa than has the preparation itself, seeing that when certain precautions are taken diarrhœa is mostly absent and that its use has been attended with marked success in the hands of very many physicians?

I am, Sirs, yours faithfully,

T. POYNTZ WRIGHT,

St. Neots, Hunts, August 18th. Medical Officer of Health.

THE SIMULATION OF ABDOMINAL DISEASE BY INTRA-THORACIC LESIONS.

To the Editors of THE LANCET.

SIRS,—In a leading article in THE LANCET of August 16th you refer to papers bearing on the above subject by Mr. H. L. Barnard[1] and by Dr. Jane H. Walker in the Mirror of Hospital Practice,[2] and you well emphasise the necessity of being on one's guard and making examination of the thoracic region, especially in the case of surgeons. Now, in most of these cases, if not in all, careful examination of the chest will, even at the earliest period, throw light on the problem. Mr. Barnard candidly admits that error in the diagnosis is usually due to neglect on the surgeon's part to have the chest examined—"the diagnosis is nearly always easy, if suspicion is aroused and the surgeon is aware of this deceptive condition." With regard to the case reported by Dr. Jane Walker, it is, to say the least, unsatisfactory. It is stated that at a period when the respiration varied from 18 to 54 per minute and the pulse-rate from 90 to 128 "her chest, which was carefully examined every day, showed no abnormal signs." Now, Sirs, it would be interesting to know exactly in what the examination of the chest consisted. For my part, I cannot believe that diaphragmatic or other obscure basal pleurisy could possibly exist without a marked diminution, if not abolition, of the shadow movement (Litten's) on the corresponding side. On the other hand, if the lesion was really under the diaphragm the shadow might remain unaffected. The abolition or restriction of the shadow movement would be quite compatible with negative signs on auscultation and percussion. There is another expression in the narration of this case which deserves notice—viz.: "Some muco-purulent material being expectorated which was examined for both tubercle bacilli and other organisms with a negative result." What is meant by "other organisms"? Are we to believe that the sputum in this particular case was sterile? Was the sputum injected into animals?

May I end by saying that it would be well if in narrating important cases authors would state the precise details of their methods of examination. It is easy to conceive that the omission of a single diagnostic test might convert a comparatively plain situation into one of grave difficulty.

I am, Sirs, yours faithfully,

Henrietta-street, W., August 18th, 1902. A. G. AULD.

THE ETHICAL SECTION AT THE RECENT MEETING OF THE BRITISH MEDICAL ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—While reporting the transactions in the Section of Ethics (annual meeting British Medical Association) as stated in THE LANCET of August 9th, p. 390, your representative, as a rule extremely accurate and impartial, has on this occasion, unwittingly I am certain, fallen into two errors relative to myself. The first, a very minor slip on p. 390, second column, third line from the top: "more than £1000" should read "*nearly* £1000." The second, rather more important, p. 391, is contained in the concluding paragraph, "The motion was carried with one dissentient vote, given by Dr. W. Muir Smith of Eastbourne." As a matter of fact, I did not vote either way; at least, I have no recollection of voting in favour of, and am absolutely certain I did not vote against, the resolution. Certainly there was one dissentient, and the confounding myself with another may be explained by the fact that the voter in question was seated next to me. I am, Sirs, yours faithfully,

Eastbourne, August 13th, 1902. WM. MUIR SMITH.

[1] THE LANCET, August 2nd, 1902, p. 280.
[2] THE LANCET, August 16th, 1902, p. 440.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS)

Memorial Tablet to the Staff of the Welsh Hospital.

THERE was unveiled on August 14th in St. David's Cathedral, by Lord Penrhyn, a memorial tablet recording the names of the members of the medical and nursing staff of the Welsh Hospital who died during the war in South Africa. The inscription on the tablet was:—

THE WELSH HOSPITAL
IN SOUTH AFRICA.
This Tablet was placed in
this Cathedral Church by the
Committee of the Welsh Hospital
in South Africa in Memory of
those members of the medical and
nursing staff of the hospital
who died for their country
in the Boer war in the years
1900 and 1901.
Professor ALFRED WILLIAM HUGHES, M.B., F.R.C.S.
Professor THOMAS JONES, M.B., F.R.C.S.
HERBERT DAVIES, M.B.
THOMAS RICHARD EAMES, dresser.
MARION LLOYD, Royal Red Cross Matron.
FLORENCE LOUISE SAGE, nursing sister.
Gorphwysant.

The graceful eulogy of Lord Penrhyn when he handed over the memorial to the care of the Dean and Chapter and the impressive tribute of Dean Howell in accepting the charge will long be remembered by those who took part in the cathedral service. In the course of his address the Dean said that not less brave or less chivalrous than those who were stricken down by disease or the sword were those who day by day and night after night stood face to face with death within the Welsh Hospital, for with them was not the rush and excitement of the battle-field, nor the wild impulse of the fray, nor the over-mastering passion for victory, but only the calm consciousness that they were doing their duty to their country and countrymen. It will be remembered that the Welsh Hospital was established in the spring of 1900 and that Professor Alfred Hughes, after acting as organising secretary in this country, went out to South Africa as chief surgeon upon the death of Professor Thomas Jones. The hospital was first of all located at Bloemfontein, afterwards at Springfontein, and was finally converted into an officers' hospital at Pretoria. A total sum of about £12,000 was subscribed in support of the undertaking and of this £8000 were expended. Of the balance £1200 have been given to hospitals in Wales and the remaining £2800 are to be distributed among incapacitated Welsh soldiers and the widows and orphans of those who died during the war.

Small-pox.

During the week ending August 16th one case of small-pox occurred at Caerphilly and terminated fatally. There is no means of isolating cases of infectious disease in this district, but an iron hospital has been hastily erected. There were three cases of the disease reported in Neath, two of the patients being officers of the workhouse. The epidemic appears practically to have subsided in Swansea, one case only having been reported during the period named, while in the previous week there were eight cases. The vaccination stations in Swansea were closed on August 14th.

Maintenance of Lunatics in Workhouses.

The Bristol board of guardians has decided to ask the Local Government Board to promote legislation for the purpose of securing to boards of guardians a grant of 3*s.* per week towards the maintenance of lunatics, imbeciles, and epileptics who are not sent to lunatic asylums or licensed houses but who are kept in workhouses or in special institutions connected with workhouses. At present boards of guardians receive from the exchequer grants of the county council 4*s.* per week towards the maintenance of each

pauper lunatic in a lunatic asylum or licensed house, and the suggestion of the Bristol board embodies a recommendation of the Royal Commission on Local Taxation contained in its report dated May 28th, 1901.

Incorporated Society of Medical Officers of Health.

Dr. Richard Prichard, medical officer of health of Llandaff and Dinas Powis, has been elected President of the West of England and South Wales branch of the Incorporated Society of Medical Officers of Health.

Diphtheria at Bristol.

In his recently issued annual report on the health of Bristol Dr. D. S. Davies deals with the question of the medical inspection of children attending public elementary schools, and after detailing certain information obtained from other large towns he states that no systematic supervision over school-children in order to detect early or unrecognised communicable disease appears ever to have been attempted in England. The prevalence of diphtheria among school-children in Bristol during 1900 and 1901 compelled Dr. Davies to take very definite steps to stamp out the disease and he was apparently successful in his endeavours. The course which he adopted was to examine the classmates of those children who were reported to him as having developed clinical diphtheria. The labour involved in this procedure may be judged from the fact that during 1901 no fewer than 2527 bacteriological examinations were made by the medical officer of health or by his deputy, Mr. J. C. Heaven. Having found that in a large percentage of these contacts there were either in the throat or nose typical diphtheria bacilli or the so-called pseudo-bacilli Dr. Davies was met with the administrative difficulty that in the absence of marked constitutional symptoms the patients could not be admitted into the hospital even if there had been room for the large number affected, while it was probable that any treatment at home would only be imperfectly carried out. In the case of the Avonmouth outbreak it was therefore arranged for these suspected "carrier" cases to attend daily at the hospital as out-patients, when antiseptic washes were applied by the nurses under medical direction. Periodical bacteriological examinations were made to determine re-admission to school and the outbreak was extinguished by the end of the year.

Vaccination Expenditure.

At the meeting of the St. Thomas (Exeter) board of guardians held on August 15th the report of the committee appointed to consider the question of vaccination fees was presented. The committee recommended that the Local Government Board should be asked to approve of the insertion of a clause in the public vaccinators' contracts to the effect that when more than one person is vaccinated at a time in an asylum, hospital, or other public institution, the fee shall be 2*s.* 6*d.* for each case if the institution is situated in the parish in which the public vaccinator is resident, and 4*s.* if situated outside such parish. The report further stated that the committee was of opinion that the public vaccinator for the Exmouth district should receive 28 days' notice to terminate his contract, and in conclusion the suggestion was made that the permission of the Local Government Board should be obtained for sanction to pay £18 expended by the public vaccinators in the purchase of calf lymph for revaccination. The guardians resolved to adopt the report.

Coronation Gifts by a Medical Man.

During the course of the coronation festivities at Sidmouth, Devon, on August 9th, Dr. T. H. Stocker Pullin presented mugs suitably inscribed to about 1000 school-children. Dr. Pullin two and a half years ago completed 50 years of medical practice at Sidmouth.

August 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Glasgow University.

THE King has been pleased, on the recommendation of the Secretary for Scotland, to approve of the appointment of Mr. J. Graham Kerr, M.A., Christ's College, Cambridge, to the Professorship of Natural History in the University of Glasgow, vacant by the resignation of Professor John Young. It is understood that for the present the chair is to include geology as well as zoology, but the appointment has been made subject to the power of the University Court to separate the two subjects and to appoint either a lecturer or professor of geology. In the recent grant from the Carnegie Trust a sum of £7500 was marked off for this purpose. Professor Young, who now withdraws from active work, has been one of the most conspicuous figures of the medical quadrangle for many years. He will take with him in his retirement the good wishes of many generations of Glasgow students.

Ether-drinking in Glasgow.

The chief constable of Glasgow in a special report to the magistrates' committee, states as a result of a recent series of inquiries that he is convinced that a considerable quantity of ether is purchased from some few chemists for drinking purposes; that the practice is limited to certain low-class localities; and that the number of ether-drinkers is relatively small. As a result of this report the Parliamentary Bills Committee has been instructed to take the necessary steps to secure the inclusion of ether in the list of "poisons" scheduled under the Pharmacy Act. This can only be done by the authority of the Privy Council.

The Treatment of Inebriates.

An experiment in the treatment of habitual drunkards instituted by the corporation of Glasgow has now been in progress for some 18 months, and a few days ago an official visit of inspection was paid by the town council to the institution in which it is being conducted. This is known as the Girgenti Home and is situated about half an hour's railway journey from the city. It is built on an estate extending to about 55 acres which was purchased for the purpose by the corporation. The qualifications for admission to the home are a certificate as a habitual drunkard and the fact of conviction for drunkenness four times within 12 months. The inmates are made to engage in dairy and laundry work and in gardening and other outdoor occupations, and the products of their work are sold with the result that the working expenses for the first year have been fully met. Up to the present date 61 patients, all women, have been admitted. The period of residence is limited to three years, but when deemed advisable a patient may be allowed to leave on licence, and this has been possible in several instances with satisfactory results. In an address delivered on the occasion of the official inspection, Mr. J. Carswell, L.R.C.P. Edin., the chairman of the inebriates' committee, claimed that the results were so far full of encouragement, more especially in view of the fact that at present they were dealing with habitual drunkards of many years' standing. He anticipated an even more satisfactory report when they were able to send to the institution those less habituated to vicious habits. At the conclusion of the inspection an address to the inmates was given by the Lord Provost.

Aberdeen University.

Dr. W. F. Croll has been appointed to hold for one year the Phillips Scholarship in connexion with the Aberdeen University.

The Caledonian Medical Society.

The annual meeting of the Caledonian Medical Society was held in Inverness on August 5th. In the afternoon the members visited the Northern Counties District Asylum at the invitation of Dr. J. Keay, who entertained them at lunch. Dr. Ogilvie Grant (Inverness), president of the society, occupied the chair, and after lunch the annual business meeting was held. The secretary reported that 25 new members had joined since the last meeting and there were 200 names on the roll. There were 115 members resident in England and foreign countries and 85 in Scotland. Dr. H. Cameron Gillies (London) was unanimously elected president and Dr. George Mackay (Edinburgh) vice-president. Dr. Grant delivered an excellent retiring address. The members dined together in the Royal Hotel. The toast of "Prosperity to the Society" was proposed by the Rev. Dr. Norman Macleod in happy terms, and the new president (Dr. Cameron Gillies) gave the standing toast of "Caledonia," and Mr. James Barron (Inverness) and Dr. W. Bruce (Dingwall) were called upon to respond. The meeting was pleasant and successful.

August 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Overcrowding of Monaghan and Cavan District Asylum.

It would appear from the report of Dr. E. M. Courtenay, inspector of lunatics, that at his last inspection of this asylum (June 12th and 13th) there were 838 patients, an increase of 27 from the previous inspection. In last year's report attention had been drawn to the very serious overcrowding which then existed, and no steps have been taken to remedy this congested state of the asylum, nor had any plan been decided on by which additional accommodation could be provided. There were now 115 patients in excess of the capacity of the institution. The bedrooms had to be converted into dormitories; the chapel dormitory, which was occupied by the women, had to be taken from them and given to the men in order to meet the increasing numbers on the male side; and the dining-hall, kitchen, and stores were insufficient for the wants of the present asylum population. Such overcrowding called for immediate attention and for immediate steps being taken to lessen it. The inspectors threaten to bring under the Lord Lieutenant's notice the condition of the asylum and to point out that the provisions of the Local Government Act have not been complied with. It would then be for his Excellency to decide whether, in the circumstances, the Government grant could be paid. Notice has been given that steps be taken to erect additional wings so as to supply the necessary accommodation. Another solution would be to build a new asylum for Cavan.

Belfast District Lunatic Asylum.

Dr. W. Graham, medical superintendent of the Belfast Asylum, has just issued his report for the year ended Dec. 21st, 1901. The total number of patients under treatment was 1108 (552 males and 556 females). There were 273 admissions during the year and 107 discharges. The recovery rate was 25·3 per cent., as compared with 21·4 per cent. in the previous year. The deaths were 71 in number (44 males and 27 females). Eight deaths were due to phthisis and none from either accident or suicide. The gross expenditure for the financial year ending March 31st, 1902, was £22,460 6*s.* 7*d.*, being a capitation cost of £23 1*s.* 4*d.*, or a diminution of £1 12*s.* 1*d.* per head on the preceding year. The most notable event of the year was the purchase of a farm abutting on the asylum grounds of 88 acres. The land is of good quality and by situation and accessibility admirably adopted for the purposes required. There is also a memorandum of inspection, by Sir George P. O'Farrell, on Nov. 20th, 1901, in which, he says, he was pleased to find every part of the asylum clean and orderly and that the general management of the institution bears distinct evidence of the zeal and ability of the medical superintendent in the discharge of his duties.

County Antrim Infirmary.

At the monthly meeting of the board of management of this institution, held on August 15th, a long discussion took place in reference to the greatly increased expenditure on the house, due to the fact that there is an unusually large number of patients at present, almost every bed being filled. It was reported that there was a great increase in the number of patients from outlying parts of co. Antrim. The feeling of the board of management was that great care should be taken to investigate thoroughly whether the patients were able to contribute to their maintenance while in the institution.

Londonderry Asylum.

The Londonderry board of guardians and the committee of management of the Londonderry Asylum are at cross-purposes in reference to the admission of patients. It seems that at present there are 100 patients in excess of the legitimate accommodation and as a result the committee of management of the asylum wrote to one of the boards of guardians in the county of Londonderry requesting it to direct its medical officers not to send lunatics to the asylum unless where absolutely compelled to do so until some accommodation was provided. About the same time, however, circulars were received from the Local Government Board directing boards of guardians to instruct their medical officers gradually to send all imbeciles in the workhouses to the asylums, which were the proper places for their treatment. This suggestion of the Local Government Board was followed out by some of the boards of guardians, with the result that when lunatics were sent to the Londonderry Asylum the committee of management ordered that they should be sent back to the workhouses again. The matter came to a crisis when on August 16th, at a meeting of the Londonderry board of guardians, a letter was read from the resident medical superintendent of the asylum to the effect that the committee of management had decided that owing to the excessive overcrowding of that institution it could not admit two of three patients sent from the workhouse to the asylum, but as the other was an acute one she would be admitted. It was urged that, except in extremely serious cases, application for the admission of insane inmates of the workhouse to the asylum should not be made at present. The clerk of the workhouse then brought before the guardians a report of the inspection of the insane inmates there, made by Sir Plunkett O'Farrell, inspector of lunatics, who said that there were a few who certainly required more skilled attention than that afforded by the workhouse. Skilled nursing was, it was reported, absolutely necessary in the case of many old and demented patients, and it was a mistake to say that such insane patients, because they were not dangerous, should be treated in a workhouse instead of a lunatic asylum. The master of the workhouse pointed out that some of these patients referred to by the inspector had been sent to the asylum, which the committee of management had referred to in the letter of the medical superintendent. After discussion, in which the medical officer of the workhouse stated that he would not accept the responsibility of the care of lunatics in the workhouse whom he considered should be treated in the asylum, it was finally decided to send lunatics certified by the medical officer as acute cases to the asylum for admission, and if they were refused admission the responsibility would attach to the committee of management.

August 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Malversation of Funds at the Faculty of Medicine.

THE *juge d'instruction* has just given a judgment with regard to the malversation of funds at the Faculty of Medicine which led to the arrest of the cashier, M. Imoville, and also of the secretary of the Faculty, Dr. Pupin, who was responsible for the treasury.[1] M. Imoville had drawn upon the funds which were confided to his care to the amount of some 76,000 francs, with a view to helping some of his friends who had fallen upon evil days. He drew with such liberality that he practically emptied the treasury. Dr. Pupin, who in great part has indemnified the professors whose salaries were in abeyance owing to the action of the cashier, has been released, it being considered that there was no case to go to a higher court (*ordonnance de non lieu*). With regard to M. Imoville, who has just been tried by the Correctional Tribunal on a charge of abuse of confidence, Dr. Motet had been charged with the duty of examining him with regard to his mental condition and his report was that Imoville was not altogether responsible. None the less, he has been condemned to 13 months' imprisonment with right of appeal and to a fine of 25 francs.

The Action of Gelatin on the Plasticity of the Blood.

M. Lancereaux recently laid before the Academy of Medicine some researches of M. Marc Laffond and M. André Lombard which tend to show that gelatin acts very vigorously as a modifier of the plasticity of the blood. This has already been proved by means of hypodermic injections and local applications in the treatment of hæmorrhages and of aneurysm, but the idea of attributing the phenomena of glycosuria, of albuminuria, and of hæmophilia, to a primary degeneration of the blood and with a certain modification of its cryoscopic properties, even if it have already been formulated, has never caused this series of symptoms to be regarded as a continuous pathogenic entity, although these symptoms are of frequent occurrence in certain morbid states. This is what constitutes the original part of the treatment described by M. Laffond and M.

[1] THE LANCET, June 21st.

Lombard—viz., that gelatin will act in the same manner even if given by the mouth. 15 grammes divided into four doses produces a remarkable effect in hæmophilia. In albuminuria and diabetes this method of treatment appears to be very efficacious, in so far that it removes the symptoms of the disease. The method of treatment can be continued for a long time and all the more readily in that giving gelatin as part of the ordinary diet is absolutely harmless.

Apollinaris and the Academy of Medicine.

The Mineral Waters Committee of the Academy of Medicine, whose duty it is to advise the Minister concerned as to giving permits for the advertising and sale of mineral waters in France, has recently come to an important decision. It has decided to withdraw from the Apollinaris Company the right of selling its water in France, a right which it has enjoyed since 1868. To explain this fact it must be remembered that of late years applications for the permission to sell mineral waters have increased to an enormous extent, and the Academy accordingly some little time ago decided not to give any new permits for the sale of mineral waters except in the case where a water presented some particular novelty of composition. Stringent regulations were drawn up with a view of safeguarding the purity of the springs and of preventing pollution of the water during bottling. The result is that it has become exceedingly difficult to get a mineral water accepted by the Academy, and when all the French mineral water firms were bound down by these regulations it became necessary to apply them also to foreign mineral waters, for it could not be expected that the Academy of Medicine should show itself more indulgent to foreign mineral waters than to French waters. So it follows that a number of so-called Hungarian purgative mineral waters, artificially prepared, have had the permission of the Academy of Medicine for sale in France withdrawn despite diplomatic representations which have been made. So, also, the permission to sell which the Apollinaris Company has enjoyed since 1868 was withdrawn in April by the Academy of Medicine, the reason being given that the composition of the water as sold varied in a great degree, that it was probably not identical in all respects with the natural spring water, and that not sufficient precautions were taken with regard to its collection and bottling. The Apollinaris Company has therefore addressed to the Minister concerned a protest containing answers to the critics of the Academy, and this latter body made a fresh examination into the question, and Professor Landouzy, President of the Mineral Waters Committee, issued a report definitely deciding to withdraw the permission of the Academy for the sale of Apollinaris Water.

Sleep and Anæsthesia produced by Electric Currents.

At the meeting of the Academy of Sciences held on July 21st M. Leduc informed his hearers that it was possible by means of electric currents to bring about almost instantaneously complete inhibition of the cerebral centres in the following manner. A source of continuous current is taken and in the circuit is placed an interrupter capable of giving some 200 interruptions per second, together with a milliampère meter. The animal to be experimented upon has its head and back shaved; the kathode electrode, wetted with salt water, is placed on the head and the anode on the back. With the interrupter working the force of the current is gradually increased by bringing more and more cells into play until slight general muscular contractions are noted. The animal then falls over and its respiration stops. The current is then lessened until respiration begins again. The animal then falls into a sleep, respiration and circulation go on quietly, but it is quite insensible to pain, only a few reflex movements being observed. Dogs have been kept in this condition for two hours. Directly the current stops they wake up and appear quite happy and lively. The current must be pushed rapidly up to the contraction stage; if given very gradually it is painful. M. Leduc found the best results to occur with a pressure of from 12 to 30 volts, with from 150 to 200 interruptions per second and with a current of from two to 10 milliampères, according to the size of the animal. Local anæsthesia can be obtained in man by placing the kathode over a nerve, the median in the wrist for example. A pricking sensation is felt which is not painful and the field supplied by the nerve becomes quite insensitive.

August 18th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis, Bovine and Human.

PROFESSOR MAX WOLFF, chief physician to the Berlin University clinic for pulmonary diseases, has made a very interesting experiment tending to prove that bovine tuberculosis (Perlsucht) and human tuberculosis are identical. Full details of the investigation are given in the *Deutsche Medicinische Wochenschrift* of August 7th. It will be remembered that in the remarkable address which Professor Koch delivered at the British Congress on Tuberculosis held in London in July, 1901, he expressed the opinion that tuberculosis was very seldom communicated to the consumers of the milk of tuberculous cows and in support of this view he drew attention to the rarity of primary tuberculosis of the intestine in the human subject. Inoculation of an animal is necessary for the purpose of showing whether a given case of tuberculous disease of the intestine is to be regarded as ordinary human tuberculosis or as perlsucht; according to Professor Koch human tuberculosis is not communicable to the lower animals. Professor Wolff had under his care a man suffering from primary tuberculosis of the intestine; at the necropsy it was ascertained that the lungs were healthy, the tuberculous infection being confined to the intestines, the spleen, and the peritoneum. Guinea-pigs were inoculated with portions of the tuberculous spleen and on the animals being killed from seven to eight weeks afterwards they were found to show general tuberculosis of the lungs, liver, and spleen, the presence of tubercle bacilli being demonstrated by the usual methods. A calf five months old, which had been already tested with tuberculin and found to give no reaction, was immediately inoculated with tuberculous material from the guinea-pigs. An emulsion made with portions of the lungs and spleen of the guinea-pigs was injected into the calf's neck, the result being that a large growth developed at the place of the injection and the adjacent glands became swollen. A month after the inoculation the calf was tested with tuberculin and gave a positive reaction; after the lapse of a further period of seven weeks the test was repeated and again the reaction was positive. The animal was killed 83 days after the inoculation with the material obtained from the guinea-pigs and at the necropsy all the symptoms of perlsucht were found. At the place of the injection there was a large growth containing caseous masses, similar formations being present in the glands in the neighbourhood; the pleura was covered with numerous tumours of varying size; there were also growths on the pericardium and the liver and tuberculous deposits in the lungs and kidneys. Bacteriological examination demonstrated the presence of tubercle bacilli, the virulence of which was proved by inoculation of guinea-pigs. As the inoculation of the calf with tuberculous material was quite successful it follows from these observations that the tuberculous deposit in the man's intestine when viewed in the light of Professor Koch's opinions must be regarded as perlsucht.

Statistics of the Medical Profession in Europe.

A very interesting article embodying various statistics relative to the medical profession throughout Europe has been published by Dr. Prinzing of Ulm in the *Zeitschrift für Socialwissenschaft*, a journal devoted mainly to questions of political economy. In Germany the total number of medical men and the proportion per 10,000 inhabitants in several specified years were as follows: 13,728 (or 3·2 per 10,000) in 1876; 15,824 (or 3·3 per 10,000) in 1887; 24,725 (or 4·4 per 10,000) in 1898; and 27,374 (or 5·1 per 10,000) in 1900. It will therefore be seen that up to 1887 the numerical increase of the medical men only kept pace with the numerical increase of the general population, but that since 1898, and especially in 1900, the former gained in numbers far more rapidly than the latter. In 1898 a special investigation was made for the purpose of ascertaining how many medical men possessed of legal qualifications practised as homœopaths, the result being that only 240 acknowledged themselves to be such. It was remarkable that in Würtemberg 3·7 per cent. of the medical men professed homœopathy, the proportion in the other states varying from 0·6 to 0·9 per cent. An enumeration of the unqualified practitioners was also made in 1898 and it was found that

for each 100,000 of the population they numbered 16·4 in Saxony, 5·3 in Prussia, and 1·3 in Alsace-Lorraine. The distribution of the medical profession according to area, or density as it might be called, was found to vary greatly in different parts of Germany. In Hesse, for instance, there was one medical man for each 28 square kilometres (10·8 square miles), while in East Prussia there was one medical man for each 192 square kilometres (74 square miles). With regard to the distribution of the medical profession in the towns the article states that in towns of more than 100,000 inhabitants there was an average of 10·8 medical men per 10,000; in towns of more than 40,000 inhabitants there were 9·2 medical men per 10,000; in towns of more than 20,000 inhabitants there were 7·6 medical men per 10,000; in towns of more than 5000 inhabitants the ratio was 6·0 medical men per 10,000; whilst in towns of fewer than 5000 inhabitants the ratio was only 2·4 medical men per 10,000. The number of the medical men, of course, varied considerably according to the character of the population, for they were relatively few in towns where the bulk of the people were of the working class. For example, at Linden in Hanover, where 79·6 of the population were employed in factories, there were only 3·1 medical men per 10,000, whilst in Königsberg, where only 35·4 per cent. were factory workers, and in Dresden, where 48·1 per cent. were factory workers, the proportion of medical men per 10,000 was 10·5 and 9·1 respectively. Dr. Prinzing then gives figures relative to the Austro-Hungarian monarchy. In Austria there were 9494 medical men, of whom no less than 5819—i.e., 61 per cent.—held fixed appointments, for the Austrian law requires local authorities to provide medical aid in places where there would otherwise be no medical man. The proportion of the medical profession to the general population has not of late varied so remarkably as in Germany. The following ratios of medical men per 10,000 of the total population have been recorded: 3·8 in 1848, 3·6 in 1858, 2·4 in 1868, 3·5 in 1876, 3·1 in 1886, and 3·6 in 1896. The corresponding ratios in Vienna were 17·0 in 1874 and 13·0 in 1896, the decrease being only an apparent one, due to the fact that the area of the metropolis has been recently enlarged by the incorporation with it of several suburbs with relatively few medical men. In Hungary in the year 1897 there were 2·8 medical men per 10,000 of the general population. In the other countries of Europe the number of medical men per 10,000 of the population was as follows: in Italy 6·3, in Switzerland 6·1, in France 3·9, in Spain 7·1, in Belgium 5·2, in Denmark 6·4, in Norway 5·3, in Sweden 2·7, and in Russia 2·7. In England, if the medical officers of the army, the navy, and the colonial services be included, the ratio per 10,000 of the population was said to be 5·7 in 1881, 6·0 in 1886, and 6·1 in 1895; if, however, the above specified classes be excluded the ratio falls to 4·8. In Scotland the ratio was 7·7 and in Ireland it was 5·6. In London in the year 1886 the ratio was 10·6 and in 1895 it was 12·8; in Liverpool it was 6·4, in Bristol it was 8·1, and in Sheffield it was 3·8. In several European capitals the number of medical men per 10,000 of the population was as follows: in Berlin 14·1, in Vienna 13·0, in Budapest 16·4, in Paris 9·7, in Brussels 14·7, in London 12·8, in Madrid 24·6, in Christiania 12·1, in Stockholm 7·7, and in Copenhagen 12·7. It must be remembered that in the above statistics the figures given for the various countries do not all belong to the same year, for the census year is not the same in each country. For instance, the figures given for Italy are of the year 1885, those for France are of 1892, those for Great Britain are of 1895, and those for Germany are of 1900.

August 18th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Lunatics in Canada.

ACCORDING to a bulletin which has been recently issued by the Census Department at Ottawa there are no less than 16,495 people of unsound mind in the total population of the Dominion of Canada. In addition to this there are 6174 deaf and dumb and 3279 blind. This means a total of 25,948 infirm persons in the Dominion, of whom 13,929 are males and 12,019 are females. 10 years ago the record was 13,365 of unsound mind, 4319 deaf and dumb, and 3368 blind. Of the total number of infirm persons to-day 5269 have been so afflicted from childhood. The seemingly great increase in the insane population in the last decade may be put down to the fact that prejudices which formerly kept down the total number of the institutional insane have been to a great extent removed.

Death of Dr. Wyatt Johnston of Montreal.

Dr. Wyatt Johnston, one of the leading physicians of Montreal and a foremost man in sanitary science in the Dominion, died at the Montreal General Hospital on the morning of June 19th from pulmonary embolism following upon an attack of phlebitis. The late Dr. Johnston graduated from McGill University in 1885 and ever since has been connected with the staff of his *alma mater*. He spent several years in the laboratories of Virchow and Growitz and had but recently succeeded to the chair of sanitary science at McGill rendered vacant through the resignation of Dean Craik. He was an original worker in the field of pathology and a frequent contributor to English and Canadian medical journals. Latterly he had given much study to medico-legal matters, upon which subject he was considered an authority in Canada.

Annual Meeting of the Medical Society of Nova Scotia.

The thirty-fourth annual meeting of the Medical Society of Nova Scotia was held at New Glasgow, Nova Scotia, on July 2nd and 3rd, under the active presidency of Dr. John W. McKay of that city. A paper by Dr. H. P. Clay of Pugwash, dealing chiefly with the injustices from which the medical profession suffer, particularly at the hands of large corporations, elicited considerable discussion and a committee was appointed to report at the next meeting. Amongst others who contributed papers for discussion were Dr. George E. Armstrong and Dr. F. G. Finlay of Montreal who read the addresses in surgery and medicine respectively. The next meeting of the society will take place next July at Antigonish, Nova Scotia. The following were the officers elected:—President: Dr. J. J. Cameron, Antigonish; First Vice-President: Dr. W. G. Putnam, Yarmouth; Second Vice-President: Mr. Murdoch Chisholm, Halifax; and secretary-treasurer: Dr. Huntley Macdonald, Antigonish, Nova Scotia.

Annual Meeting of the Maritime Medical Association.

The twelfth annual meeting of the Maritime Medical Association was held at Charlottetown, Prince Edward Island, on July 9th and 10th. Amongst others from a distance who were present and contributed papers were Dean W. B. Giekie of Trinity Medical College, Toronto; Dr. H. D. Hamilton of McGill University, Montreal; and Dr. Stoddart of Pueblo, Colorado, U.S.A. The following officers were elected for the ensuing year: President, Dr. Murray McLaren, St. John, New Brunswick; Vice-President for Prince Edward Island, Dr. P. C. Murphy, Tignish; Vice-President for New Brunswick, Dr. R. L. Botsford, Moncton; Vice-President for Nova Scotia, Dr. G. M. Campbell, Halifax; secretary, Dr. T. D. Walker, St. John, New Brunswick; and treasurer, Dr. C. A. McPhail, Summerside, Prince Edward Island.

Living 50 Feet below the Surface of the Earth.

The *Canadian Journal of Medicine and Surgery* has the following interesting report of an extraordinary case of burial alive, the issue of which was surprisingly fortunate:—

On June 24th a well-digger, named Joshua Sanford, owing to the collapsing of the brick casing of a well, at the Scott farmhouse near Paris (Ont.), was imprisoned in the well for close on 100 hours. In order to rescue Sanford a shaft 50 feet in depth was made parallel to the well in which he lay. When on a level with the position occupied by the man a tunnel was constructed from the shaft to the well large enough to permit the passage of a man's body, and the first nourishment that he received in nearly 80 hours was given him. On Friday night, June 27th, it was found that his right leg was held tightly in a mass of brick, so that it could not be moved. A second tunnel three feet beneath the first one was put in and cased. The rescuers, John Carnie, William Hamilton, and Richard Doyle, introduced scantling through the lower tunnel, so as to support the weight of the mass of collapsed brick and sand surrounding Sanford's body and then picked out the bricks, so that the imprisoned leg could be released without causing the mass of debris to fall lower down. Sanford's head was then lowered to the same level as his feet and he was withdrawn from the well through the lower tunnel and carried up to the surface in a bucket at 5.30 Saturday, 99½ hours after the accident had occurred. After he had been placed in bed he was examined by Drs. R. Dunton, Burt, Sinclair, and Loggie of Paris, Addison of St. George, and Stanley of Brantford. They found that Sanford had suffered comparatively little during his incarceration and long period of abstinence from food. There were a number of slight scalp wounds on his head caused by falling bricks. There were wounds and bruises all over the body and several contusions on the right leg, which anchored the man in the well, and around which a rope had been fixed in an effort to drag him out of the hole. This leg was apparently paralysed and this condition

was expected to exist for some time. His speech was nearly normal. His pulse was 140, his temperature 98° F., and the respirations 44.

Everything points to Sanford being a man of extraordinary pluck and endurance who owes his life to the exhibition of his manly qualities.

Toronto, August 7th.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and having conformed to the by-laws and regulations have been admitted Members of the College and have received their diplomas:—

Joseph Ebenezer Adams, St. Thomas's Hospital; Alfred Cole Ambrose, Cambridge University and Guy's Hospital; Cauldwell Hamilton Anderson, Melbourne University and St. Thomas's Hospital; Kenneth Anderson, Guy's Hospital; George James Smith Atkinson, St. Mary's Hospital; Harold William Atkinson, M.A. Camb., Cambridge University and St. Bartholomew's Hospital; Leslie Baldwin Aveling, B.A. Camb., Cambridge University and London Hospital; Charles Harrison Barber, B.A. Oxon, Oxford University and King's College Hospital; Edward Augustus Bell, King's College Hospital; Charles Birch, Birmingham University and King's College Hospital; Anthony Bourchier Bradford, Durham University and St. Thomas's Hospital; Charles Bramhall, London Hospital; William Kenneth Dudoit Breton, St. Mary's Hospital; Frederick William Cheese and Noel Alfred William Conolly, St. Bartholomew's Hospital; George Brooke Forbes Churchill and Reginald Thomas Collins, Guy's Hospital; William Walter Claridge, Middlesex Hospital; James Duncal Clay, King's College Hospital; Charles Corfield, University College and Royal Infirmary, Bristol; Hugh Pennington Croly, Arthur Sydney Downton, and Thomas Scarborough Dudding, London Hospital; Charles Woolmer Davies, St. Thomas's Hospital; William James Davies, Guy's Hospital; John Thomas D'Ewart, Owens College and Royal Infirmary, Manchester; Stanley Dodd, Westminster Hospital; George Grigson Eliett, Cambridge University and St. Bartholomew's Hospital; Francis Heygate Ellis, David Haydn Evans, and Gerald Sydney Ewen, St. Bartholomew's Hospital; Charles Wesley Forsyth, Owens College and Royal Infirmary, Manchester, and University College Hospital; James Bernard Chalmers Francis, Westminster Hospital; Samuel Newall Foulkes and Philip Anthony Mark Green, London Hospital; William Gillitt, Middlesex Hospital; Charles Hebden Gregory, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; Charles Frederick Hardie, M.A. Camb., Cambridge University and University College Hospital; Maurice Willoughby Haydon and Christopher Tredwell Holford, St. Thomas's Hospital; Percy Alfred Hayne and Lawrence Charles Hunt, St. George's Hospital; Frederick Aylmer Hort, L.S.A. Lond., Cambridge University and Middlesex Hospital; David Morgan Hughes, Cardiff and University College Hospital; Edmund Octavius Hughes, St. Bartholomew's Hospital; Geoffrey Wallace Grainger Hughes, King's College Hospital; Thomas Hutchinson, Birmingham University; Charles Uncles Ind, St. Thomas's Hospital; William Watkin Cadwaladr Jones, Guy's Hospital; Gerald Ainslie Kempthorne, B.A. Camb., Cambridge University and St. Thomas's Hospital; Richard Ernest Howell Leach, B.A. Oxon., Oxford University and St. Thomas's Hospital; Harold Ashton Lyth, University College Hospital; Herbert Love, Norman Macfadyen, Edward Lister Martin and Alban Anderson Meaden, St. Bartholomew's Hospital; James Bennett McCord, M.D., Chicago, North-Western University, U.S.A., and St. Thomas's Hospital; William Thomas McCowen and Arthur Cyril Motta, St. Mary's Hospital; William Chisholm Macdonald, M.B., B.Ch. Edin., New Zealand and Edinburgh Universities; Anthony Mavrogordato, B.A. Oxon., Oxford University and St. Thomas's Hospital; Thomas Frederick Gisborne Mayer, London Hospital; George Whitley Micklethwait, Cambridge University and St. Bartholomew's Hospital; Ernest Henry Milson, St. Mary's and Guy's Hospitals; Thomas Morgan, Guy's Hospital; William Herbert Neil, University College Hospital; Loraine Orton, Cambridge University and St. Bartholomew's Hospital; James Matthew O'Brien and Archibald Gates Payne, L.D.S. Eng., Charing Cross Hospital; Harold Thornbury Palmer, Guy's Hospital; Burnet Graham Patch, St. Thomas's Hospital; Fred Baily Penfold, L.D.S. Eng., Middlesex Hospital; Daniel Pettigrew, L.S.A. Lond., Sheffield, Glasgow, and University College Hospital; Harry Pierpoint, University College and Royal Infirmary, Liverpool; John Isaac Pratt, M.B. Toronto, L.C.P. & S. Ontario, Toronto University and London Hospital; Ernest George Pringle, St. Bartholomew's Hospital; Alan Carpmael Randford, William Owen Roberts, and Carrick Hey Robertson, Guy's Hospital; William Arthur Rees, Middlesex Hospital; Thomas Harper Rice, Pennsylvania, King's College Hospital and Edinburgh University; John Cecil Rix, Cambridge University and Middlesex Hospital; Christian Cathcart Robinson, St. Bartholomew's Hospital; Thomas Corrie Rutherford and Henry William Sexton, St. Thomas's Hospital; Richard Harvey Sankey, M.A. Oxon., Oxford University and St. Bartholomew's Hospital; Edward Spencer Scott and Hugh Bernard Willoughby Smith, London Hospital Ralph Davies Smedley, Cambridge University and Guy's Hospital; Frederick Morton Vincent Smith and Gayton Warwick Smith, Guy's Hospital; James Smith, University College, Bristol, Guy's, and King's College Hospitals; Hugh Ellis Stanger-Leathes, St. Bartholomew's Hospital; Frederick Joseph Stansfield, Yorkshire College and General Infirmary, Leeds; John Leeming Stephenson, St. Mungo's College, Glasgow; Basil Nelson Tebbs, M.A. Camb., Cambridge University and St. George's Hospital; Daniel Jenkins Thomas, University College, Cardiff, and Middlesex Hospital; Joseph Bernard Thompson, University College Hospital; Livsey Tong, Owens College and Royal Infirmary, Manchester; John Arthur Topham, B.A. Camb., Cambridge University and London Hospital; Edward Newbury Thornton, Charles Leonard Traylen, Moses Thomas Williams, and Geofrey Plumpton Wilson, London Hospital; Henry Charles Wales, M.B. Toronto, Toronto University; Bernard Joseph Ward, Birmingham University; Frank Ernest Welchman and Marmaduke Cordeux Wetherell, M.B., B.S. Durh., Guy's Hospital; Charles Wheen, B.A. Oxon., Oxford University and St. Thomas's Hospital; Henry Currer Williams, B.A. Cantab., Cambridge University and St. Thomas's Hospital; and Edward Allan Wilson, Yorkshire College and General Infirmary, Leeds.

SOCIETY OF APOTHECARIES OF LONDON.—In August the following candidates passed in the subjects indicated:—

Surgery.—W. Ball (Section II.), Westminster Hospital; S. Bentley (Sections I. and II.), Sheffield; A. E. Henton (Sections I. and II.), St. Mary's Hospital; G. A. Jones (Sections I. and II.), St. George's Hospital; J. D. Keir (Sections I. and II.), St. Mary's Hospital; D. E. Lockwood (Section II.), Royal Free Hospital; and A. R. McEnnery (Sections I. and II.), St. Mary's Hospital and Bristol.

Medicine.—W. Ball (Section II.), Westminster Hospital; I. Griffith (Section I.) and A. T. Harvey, London Hospital; A. R. McEnnery (Sections I. and II.), St. Mary's Hospital and Bristol; E. H. Noney (Sections I. and II.), Calcutta; C. H. Osmond (Section II.), Glasgow; and C. M. Woods (Section II.), Charing cross Hospital.

Forensic Medicine.—W. C. P. Bremner, Toronto; A. R. McEnnery, St. Mary's Hospital and Bristol; E. H. Noney, Calcutta; H. F. B. Roberts, St. Bartholomew's Hospital; and F. C. Whitmore, Guy's Hospital and Bristol.

Midwifery.—W. Ball, Westminster Hospital; G. J. Humphreys, St. Bartholomew's Hospital; A. R. McEnnery, St. Mary's Hospital and Bristol; J. P. Nettell, London Hospital; E. H. Noney, Calcutta; S. Northwood, Birmingham; and H. F. B. Roberts, St. Bartholomew's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—W. Ball, G. A. Jones, D. E. Lockwood, A. R. McEnnery, H. F. B. Roberts, and C. M. Woods.

FOREIGN UNIVERSITY INTELLIGENCE.—*Algiers:* Dr. Soulié has been appointed to the Chair of General Pathology.—*Barcelona:* Dr. A. G. Prats has been appointed *privat-docent* of Medical Pathology.—*Berlin:* Professor von Leube of Würzburg has been offered the chair of Medicine held by the late Dr. C. Gerhardt, Dr. Gustav Brühl has been recognised as *privat-docent* of Otology, and Dr. Franz Müller as *privat-docent* of Pharmacology.—*Breslau:* Dr. Victor Klingmüller has been recognised as *privat-docent* of Dermatology.—*Chicago* (*Rush Medical College*): Dr. A. D. Bevan has been appointed Professor of Surgery in place of the late Dr. Fenger.—*Erlangen:* Dr. R. Fuchs has been recognised as *privat-docent* of Physiology.—*Greifswald:* Dr. Klapp has been recognised as *privat-docent* of Surgery.—*Heidelberg:* Dr. Sötbeer has been recognised as *privat-docent* of Children's Diseases.—*Marburg:* Dr. O. H. Hess has been recognised as *privat-docent* of Medicine and Dr. Seemann as *privat-docent* of Physiology.—*Moscow:* Dr. A. Bernstein has been recognised as *privat-docent* of Neurology and Psychiatry.—*Munich:* Dr. Wilde has been recognised as *privat-docent* of Hygiene.—*New York* (*College of Physicians and Surgeons*): Dr. L. Emmett Holt has been appointed Professor of Pædiatry in succession to Dr. Jacobi, resigned.—*Odessa:* The following appointments to Professorships in the new medical faculty are announced: Anatomy, Professor Batuieff of St. Petersburg; General Pathology, Professor Podvysotski; Physiology, Professor Verigo; Physiological Chemistry, Professor Medviedeff; Diagnosis, Professor Michailoff; Pharmacology, Professor Borisoff of St. Petersburg; Surgery, Professor Sapeshko; Operative Surgery, Professor Lysenkoff; Pathological Anatomy, Professor Kishenski; and Gynæcology, Professor Masen.—*Padua:* Dr. Bolognini of Bologna has been recognised as *privat-docent* of Children's Diseases.—*Prague* (*German University*): Dr. Hermann Schlosser has been appointed Extraordinary Professor of Surgery. Dr. Margulics has been recognised as *privat-docent* of Neurology.—*Rio de Janeiro:* Dr. Magalhães has been appointed Assistant Professor of Pathology and Clinical Medicine.—*Rome:* Dr. L. Zoja of Parma has been recognised as *privat docent* of Medicine.—*St. Petersburg Military Medico-Chirurgical Academy:* Dr. Paul Avororoff has been recognised as *privat-docent* of General and Experimental Pathology.—*Vermont:* Dr. D. Shirres of Montreal has been appointed Professor of Diseases of the Nervous System.—*Vienna:* Dr. Otto Grosser has been recognised as *privat-docent* of Anatomy and Dr. Roland Grassberger as *privat-docent* of Hygiene.—*Würzburg:* Dr. Burkhardt has been recognised as *privat-docent* of Surgery.

HOSPITAL SATURDAY.—The amount raised for the Hospital Saturday Fund at Newton Abbot, Devon, was £130.

MEDICAL MAGISTRATES.—Mr. J. Montgomerie Alston, M.D. Glasg., L.R.C.S. Edin., and Mr. James Kirkland, L.R.C.P. Edin., L.F.P.S. Glasg., have been placed on the Commission of the Peace for the county of Lanark.

EXETER SEWAGE SCHEME.—The new works which have been constructed at Exeter for the disposal of the city sewage by the septic tank system invented by the surveyor of Exeter were formally opened on August 13th in the presence of a large gathering. The works are constructed to deal with the present population of 47,000 and were commenced in April, 1900. The area of the works is about four acres, and they consist of six septic tanks and 12 bacterial filters. The total cost of the undertaking is about £40,000.

JOURNAL OF TROPICAL MEDICINE: PRIZE ESSAYS ON SUBJECTS CONNECTED WITH TROPICAL DISEASES.—1. A prize of the value of £10, entitled the Sivewright prize, presented by the Hon. Sir James Sivewright, K.C.M.G., LL.D., for the best article on the Duration of the Latency of Malaria after Primary Infection, as proved by Tertian or Quartan Periodicity or Demonstration of the Parasite in the Blood, has been awarded to Dr. Attilio Caccini, Assistant Physician, Hospital of Santo Spirito in Sassia, Rome. 2. A prize of the value of £10, entitled the Belilios prize, presented by the Hon. E. R. Belilios, C.M.G., for the best article on the Spread of Plague from Rat to Rat, and from Rat to Man by the Rat-flea, has been awarded to Dr. Bruno Galli-Valerio, Professor in the University of Lausanne, Switzerland.

CENTENARIANS. — Mrs. M. Short died at St. Austell, Cornwall, on August 4th, at the age of 106 years and eight months. St. Austell still has a centenarian in the person of William Lemin, who was born at Warleggan, near Bodmin, in 1799.—Mrs. Mary Taylor Morgan, who attained the age of 102 years on June 23rd last, died at 16, High-street, Marylebone, W., on August 14th. Her last days were rendered particularly happy owing to a gracious act on the part of Her Majesty the Queen, who on August 8th caused a sympathetic letter to be addressed to the old lady and sent her a box of tea and one of the Coronation cups.—The *Times* of August 20th stated that the Viscount Barbacena, a distinguished Brazilian, celebrated his hundredth birthday at Rio de Janeiro on July 20th. The proceedings included a special meeting of the Brazilian Historical and Geographical Society at which Viscount Barbacena was present and expressed his acknowledgment of the honour shown him. The British residents in Rio de Janeiro had already presented him with a gold medal on the occasion of the Diamond Jubilee of Queen Victoria. He was at school in England when a boy, was present at the coronation of George IV., and in 1828 was appointed secretary of the Brazilian Legation in London under his father, the Marquis Barbacena.

THE LATE PROFESSOR LEOPOLD SCHENK.—It is announced from Vienna that Dr. Leopold Schenk, formerly a professor at the University and director of the Embryological Institute in that city, died on August 18th. Professor Schenk's name became quite a household word in 1898 owing to the peculiar views which he held with respect to the factors that determine the sex of a fœtus. He considered that if the urine of a woman contained any sugar whatever, even an amount so small as to be recognisable only by the phenylhydrazin reaction, there was a high probability that her offspring would be females rather than males. In order that she might have male progeny the state of her nutrition must be improved to the extent of causing the total disappearance of the sugar, the means to this end being the use of a diet in which nitrogenous and fatty components preponderated and carbohydrates were limited as much as possible. Professor Schenk expounded these ideas in a book which was reviewed in THE LANCET of May 28th, 1898, p. 1472. We advised expectant couples who thought of trying this system not to be over-sanguine. Professor Schenk's opinions met with no acceptance in Vienna and his persistence in maintaining them led to his being removed from both the University and the Embryological Institute. He does not seem to have been daunted by the opposition of his professional brethren and by his failure to make converts, for he upheld his views in an address delivered at a congress in Berlin in the summer of 1901, but the speakers who took part in the ensuing discussion did not give him any encouragement.

DONATIONS AND BEQUESTS.—By the will of Miss Blackman of Ramsgate, whose estate has just been proved, £10,000 each are bequeathed to Guy's Hospital and the Kent and Canterbury Hospital, and £1000 to the Seamen's Home at Ramsgate.

A NOVEL PATENT.—A Swiss inventor has patented an appliance for comparing handwritings or other objects. Its action seems to be mainly optical; it contains a mirror in part reflecting and in part transparent. A diagram and the specification will be found in the *Official Gazette* of the United States Patent Office issued on August 5th, 1902

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Cesare Taruffi, formerly Professor of Pathological Anatomy in Bologna.—Dr. Iwan Nowacki, formerly Professor of Clinical Surgery in the University of Moscow, at the age of 75 years.—Dr. Walther, of St. Petersburg Medico-Chirurgical Academy, translator of several Russian physiological works into German, suddenly, while on a journey in Western Russia.—Dr. J. Maizner, formerly Professor of Midwifery in Clausenburg.—Dr. J. Eastman, Professor of Gynæcology in Indianapolis.—Dr. Otto Braehmer of Berlin, who was a leading authority on matters connected with railway hygiene, both civil and military. He was 64 years of age and his death was due to cardiac disease.—Dr. Friedrich Reineboth, Professor of Medicine in the University of Halle. He took great interest in the better housing of the poor as a means of diminishing deaths from tuberculosis. He was only 35 years of age.—Dr. Reily of Halle, the eminent anatomist and alienist.—Professor S. L. Schenk, whose name will be remembered in connexion with the question of the determination of sex. After the discussion referred to he resigned his chair of Histology and Embryology in the University of Vienna.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, 156, Charing Cross-road, W.C.

A Pack of Poems. Sixteen couple and a half of Sporting Songs and Sonnets. By John Lawrance Longstaffe, author of "Diversities in Verse." Price 1*s.* net.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

Aids to Dental Anatomy and Physiology. By Arthur S. Underwood, M.R.C.S., L.D.S., Professor of Dental Surgery at King's College, London. Second edition. Price 2*s.* 6*d.*

CLOWES, WILLIAM AND SONS, Limited, 23, Cockspur-street, S.W.

Transactions of the British Congress on Tuberculosis for the Prevention of Consumption, London, July 22nd to 25th, 1901. Four volumes. Price 24*s.* the set, or 12*s.* 6*d.* per volume.

GREEN, WILLIAM AND SONS, Edinburgh.

Encyclopædia Medica. Under the general editorship of Chalmers Watson, M.B., F.R.C.P.E. Vol. xi. Sciatica to Syncope. Price not stated.

"KNOWLEDGE" OFFICE, 326, High Holborn, W.C.

Wireless Telegraphy. A Popular Exposition. By G. W. de Tunzelmann, B.Sc., Consulting Engineer. Third edition, Price 1*s.* 6*d.*

LEWIS, H. K., 136, Gower-street, W.C.

Ligaments: their Nature and Morphology. By J. Bland-Sutton. Third edition. Price 4*s.* 6*d.*

MACMILLAN AND CO., Limited, London and New York.

Clinical Psychiatry. A Text-book for Students and Physicians. Abstracted and adapted from the Sixth German Edition of Kraepelin's "Lehrbuch der Psychiatrie." By A. Ross Defendorf, M.D., Lecturer in Psychiatry in Yale University. Price 15*s.* net.

WRIGHT, JOHN AND CO., Bristol.

Medical Ethics: A Guide to Professional Conduct. By Robert Saundby, M.D. Edin. Price 3*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

APPLEBY, E. BERTRAM, M.B., B.S. Durh., has been appointed Senior Resident Surgeon to the Nottingham General Dispensary.

BENNETT, J., M.B., Ch.B., B.A.O. R.U.I., has been re-appointed Medical Officer of Health for the Borough of Hyde, Cheshire.

COAKER, F. W. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Bromsgrove Rural District.

COLLIE, R. J., M.D. Aberd., Medical Examiner to the London County Council, and Assistant Medical Officer to the London School Board, to be employed in the work of the Medical Department, but chiefly in connexion with the examination of children requiring special instruction—viz., feeble-minded, cripple, blind, or deaf.

EWART, DAVID, M.B., Ch.B. Edin., F.R.C.S.E., has been appointed Honorary Surgeon to West Sussex, East Hampshire, and Chichester General Infirmary.

FENTON, W. R., B.A., M.B. Univ. Dublin, has been appointed Acting Principal Medical Officer in Mashonaland during the absence of leave of Dr. Fleming, C.M.G.

FRENCH, G. W. H., F.R.C.S., has been appointed an Assistant Surgeon to St. Paul's Hospital for Skin and Genito-Urinary Diseases, Red Lion-square, W.C.

HILL, W. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health to the Clevedon Urban District Council, vice Dr. Stephen Skinner, deceased.

JENKINS, G. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health to the Usk Urban District Council, Mon.

MCGACHEN, FRED. WM. DOBSON, M.D., D.P.H. Lond., has been appointed Medical Officer to the Weymouth and Westham District, and Public Vaccinator, Weymouth and Melcombe Regis, vice Dr. E. N. Pridmore, M.B. Lond., resigned.

PEACOCK, W. E., M.D. Durh., has been appointed Medical Officer of Health to the Felling Urban District Council.

STEINHAUSER, J. R., M.B., B.Sc. Lond., has been re-appointed Medical Officer for the Borough of Lewes.

WALKER, J. W. THOMSON, M.B. Edin., F.R.C.S., has been appointed Assistant Surgeon to the North-West London Hospital.

WHARTON, JOHN, B.A., B.C. Cantab., has been appointed House Surgeon to the Manchester Eye Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BETHNAL GREEN INFIRMARY.—Third Assistant Medical Officer. Salary £100 per annum, with apartments, board, washing, &c.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary £100 per annum, with apartments, rations, &c.

BOURNEMOUTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BRISTOL GENERAL HOSPITAL.—Medical Officer. Salary £250, non-resident.

CANCER HOSPITAL, London.—Pathologist. Salary £250 per annum.

CANCER RESEARCH FUND, Examination Hall, Victoria Embankment, London, W.C.—General Superintendent.

CARDIFF INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, washing, and apartments.

CHELTENHAM GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £112 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Second House Physician for six months. Salary at rate of £30 per annum, with board, washing, and residence.

CITY (FEVER) HOSPITAL, Aberdeen.—Resident Physician. Salary £100, with board and rooms.

CUMBERLAND INFIRMARY, Carlisle.—Resident Medical Officer as House Physician and House Surgeon. Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon. Salary £100, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon for six months. Honorarium of £25, with board, residence, &c.

EDINBURGH VICTORIA HOSPITAL FOR CONSUMPTION.—Resident Physician for six months. Residence, board, and washing, with nominal honorarium.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with washing allowance, board, and residence.

ISLE OF THANET UNION.—Medical Officer for Minster District, Workhouse, and Cottage Homes, Manstone. Salary £276 per annum. Also Medical Officer for Birchington District. Salary £34 per annum.

LANARK MIDDLE WARD ISOLATION HOSPITAL.—Resident Physician. Salary £140 per annum, with board, &c.

LEITH HOSPITAL.—House Physician, Assistant House Physician House Surgeon, Assistant House Surgeon, and Surgeon, all for six months.

LIVERPOOL, CITY OF, INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LIVERPOOL WORKHOUSE, Brownlow Hill.—Assistant Medical Officer. Salary £100 per annum, with board and residence.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Anæsthetist. Also House Surgeon.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer, unmarried, for six months. Salary at rate of £80 a year, with board and lodging.

MIDDLESEX HOSPITAL, W.—Medical Officer in charge of the Finsen and X Ray Department. Salary £150 per annum.

NORTH LONSDALE HOSPITAL, Barrow-in-Furness.—House Surgeon. Salary £80, with board, residence, and attendance.

PORTSMOUTH, PORTSEA, AND GOSPORT ROYAL HOSPITAL.—Assistant House Surgeon. Honorarium at rate of £50 per annum, with board, &c.

READING ROYAL BERKSHIRE HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROXBURGH DISTRICT ASYLUM, Melrose, N.B.—Assistant Medical Officer. Salary £120 per annum, with board, rooms, and washing.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Junior Assistant House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and washing.

SHEFFIELD CORPORATION CITY HOSPITALS (three).—Second Assistant Medical Officer. Salary £150 per annum, with board, lodging, and attendance.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried. Honorarium at the rate of £80 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £40 per annum, with board, washing, and residence.

TADCASTER, GOOLE, RICCALL, AND SELBY RURAL DISTRICTS AND SELBY URBAN DISTRICT.—Medical Officer of Health. Salary £420 per annum.

TIVERTON, DEVONSHIRE, INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser, unmarried. Salary £30 and all found.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer. Salary £100 per annum, with board, lodging, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Surgeon, also House Physician, both for six months. Board and lodging provided.

WEST RIDING ASYLUM, Wadsley, near Sheffield.—Assistant Medical Officer and Pathologist. Salary £140 per annum, rising to £160, with board, &c.

WITHINGTON URBAN DISTRICT COUNCIL HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, apartments, and washing.

Births, Marriages, and Deaths.

BIRTHS

FOOKS.—On August 18th, at the New Infirmary, Isleworth, W., the wife of W. Pemberton Fooks, M.A., M.B. Cantab., of a daughter.

LANDER.—On August 13th, at Hatheresage, Derbyshire, the wife of H. W. G. Lander, M.B. Edin., of a daughter.

PLUMMER.—On August 17th, at Old Elvet, Durham, the wife of Selby Plummer, M.D., of a daughter.

MARRIAGES.

MAY—YOUNG.—On August 19th, at Havant parish church, by the Rev. E. Geoffrey May, brother of the bridegroom, assisted by the Rev. S. G. Scott, rector of Havant, Henry James May, M.B., B.C. Cantab., M.R.C.S., L.R.C.P., of Ivanhoe, Archers-road, Southampton, to Maud Landale Young, widow of the late Malcolm G. Young, Indian Staff Corps, and daughter of the late Captain Richard Cumberland, of the 70th Foot. No cards.

PHILLIPS—JENKIN.—On August 14th, at Sandewednack church, The Lizard, Cornwall, by the Rev. E. W. Edwards, brother-in-law of the bridegroom, assisted by the Rev. C. S. Vyvyan, rector, and the Rev. P. G. Chamberlain, Harry Harding Phillips, M.R.C.S. Eng., L.R.C.P. Lond., of Hamilton House, Penge, to Frances Mary, third daughter of Pearse Jenkin of Trewirgie, Redruth, and Tregullas House, The Lizard.

THYNE—YOUNG.—On the 6th August, at Metheringham, by the Rev. J. Sinker (brother-in-law of the bride), the Rev. D. W. Barrett, M.A., rector of Chipping Barnet, and the Rev. W. Ignatius S. Rawson, vicar, William Thyne, M.A., M.D., Barnet, to Kate Christian, youngest daughter of the late Thomas Young and Mrs. Young of Roewath, Cumberland.

DEATHS

GASQUET.—On August 13th, at College-gate, Brighton, Joseph Raymond Gasquet, M.D. Lond., aged 64 years.

LEIGH.—On the 16th inst, at 360, City-road, E.C., Richard Hodges Leigh, aged 82, surgeon. For many years in practice at 59, Barbican, E.C.

WYMAN.—On August 16th, at Red Brae, Putney-hill, S.W., William Sanderson Wyman, M.D. St. And., F.R.C.S., L.S.A., in his 71st year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DIFFICULTIES UNDER THE INFECTIOUS DISEASES (NOTIFICATION) ACT.

To the Editors of THE LANCET.

SIRS,—Can you tell me if a medical practitioner is entitled to his 2*s.* 6*d.* if he notifies a case that has already been notified by his locum-tenens—that is, 5*s.* for the same case? This particular case was notified by the locum-tenent. The principal returned and notified the same case, being unaware that his locum-tenent had done so. On the previous notification being pointed out to him he said that he was entitled to the fee. I take it, at any rate, that it is contrary to the spirit of the Act. I am, Sirs, yours faithfully,

August 18th, 1902. X. Y. Z.

*** There are occasions when two certificates of notification are sent and when payment on both is due. There can be no reason for a medical practitioner notifying a case already notified by the person whom he has appointed to act as his deputy, but, as we understand our correspondent, the second notification was made by inadvertence. It must be remembered that the principal, being ignorant that his locum-tenent had notified the case, would have broken the law and incurred a fine, for all he knew to the contrary, had he not made the notification. We do not say that he should be paid the fee because the notification was made in good faith; but we think his view should be put before the Local Government Board. The interpretation of this Act constantly gives rise to difficulties, as all our readers know. In our issue of August 9th we stated that a house surgeon was bound to certify cases of infectious disease sent for admission to a hospital of which he was the medical officer. It appears, however, on reconsidering the letter of "House Surgeon," that infectious disease must be notified by a hospital medical officer who becomes aware of it and that he is entitled to a fee for doing so, but *not* if he is the medical officer of a hospital in which persons suffering from infectious disease are received and is acting in that capacity. According to this "House Surgeon" would notify and receive a fee if he originally discovered or became aware of the infectious disease, but he would not notify or receive a fee if another medical man had already done so and sent the patient to the hospital as to a "hospital in which persons suffering from infectious diseases are received." The point, however, is obscure and we are not aware of any judicial decision dealing with it.—ED. L.

HOME OR INSTITUTION WANTED.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me of any institution or home that would take a boy, aged 13 years, given to masturbation and educate him. His parents are willing to pay any reasonable amount.

I am, Sirs, yours faithfully,

August 19th, 1902. M. D.

THE "Y" FUND.

SURGEON-GENERAL H. S. MUIR begs thankfully to acknowledge additional donations towards the above Fund from Colonel A. M. Branfoot, C.I.E., I.M.S., Major D. Simpson, I.M.S., and the following officers of the Royal Army Medical Corps: Lieutenant Colonels R. H. Forman, R. C. K. Laffan, W. J. R. Rainsford, C.I.E., and S. J. Rennie; Majors T. G. Lavie, V. H. W. Davoren, S. Powell, H. E. Cree, Macdonald, J. K. Ritchie, C. R. Bartlett, and E. Swan Marder; Captains H. Hewetson, R. W. Clements, and S. O. Hall; and Lieutenants A. R. Greenwood, F. MacLennan, and A. H. M. Mitchell. The fund now amounts to £560. It may be explained that this is in response to an appeal made privately to members of the profession for benevolent aid in a distressing case which has been described in a letter sent to a limited number of medical men (who would help the cause by kindly "handing on" to *confrères*). Should any reader of THE LANCET desire further particulars with a view to expressing *practical sympathy*, a copy of the letter will be forwarded on application to Surgeon-General Muir, 26, Kensington-gardens-terrace, Hyde Park, London, W.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—I should be obliged if you would insert the following in THE LANCET, as some of your correspondents may be able to assist me in the matter. I am attending an old man, aged 80 years, suffering from senile dementia. He is quite harmless but a great trouble to his family as he has incontinence of fæces and is constantly passing his motions about the room. Is there any inexpensive institution where he can be taken? I have been unable to find anything intermediate bitween a Poor-law institution and one much above the means of my patient's friends. I am, Sirs, yours faithfully,

101, Northcote-road, New Wandsworth S.W., JAS WATTS

August 18th 1902.

THE CASE OF DR. W. C. RAINSBURY.

To the Editors of THE LANCET.

SIRS,—At the Nottingham Assizes on July 17th Dr. Rainsbury of Skeghy was sued by a collier employed at the Teversal Colliery for damages for alleged unskilful treatment of an injury to his arm sustained in November, 1900. The trial resulted in a verdict for the plaintiff for £25 damages and costs. It would serve no useful purpose now to enter at length into the merits of the case, as judgment has been given. The case was commented on in a leading article which appeared at p. 228 of THE LANCET of July 26th. From perusal of the reports of the trial it appears that Dr. Rainsbury has suffered a great hardship by reason of the judgment. The expenses of defending the action were borne by the Medical Defence Union, of which Dr. Rainsbury is a member. But by the regulations of that union it cannot pay the damages or costs which are adjudged against a defendant. The judgment debt and costs amount to £182 6*s.* 2*d.* Dr. Rainsbury has made no appeal to the Midland Medical Union for assistance, but in view of the special nature of the circumstances and of the apparent injury which he has sustained the President and Council recommend that a fund be raised by subscription in order to assist Dr. Rainsbury in discharging the judgment debt and costs. Medical men are accordingly earnestly invited to subscribe to the fund. The matter is most urgent and pressing. I therefore venture to ask that donations intended to be made be sent to me at the earliest opportunity.

I am, Sirs, yours faithfully,

GEORGE S. O'ROURKE,
Secretary, Midland Medical Union.

Albion Chambers, King-street, Nottingham, August 13th, 1902.

TWO QUERIES.

To the Editors of THE LANCET.

SIRS,—I should feel obliged if you would give me the following information in THE LANCET. 1. Have the new regulations for the D.P.H. diploma altered those which were in force as regards the course necessary for those persons who had qualified in 1889? 2. I should feel much obliged if you would inform me where I could obtain the papers written by Professor Koch on malaria, particularly those which were the outcome of his visit to Africa and the eastern world; and are these papers to be obtained translated into English?

I am, Sirs, yours faithfully,

August 1st, 1902. BICEPS.

*** 1. The new rules are expressly stated not to apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890. The rules as originally designed will be found in THE LANCET, Dec. 15th, 1900, p. 1772; while the debate upon them will be found in our issue of June 7th (p. 1638) and 14th (p. 1734), 1902. 2. Professor Koch's papers appeared over a year ago in the *Deutsche Medicinische Wochenschrift*, published by Georg Thieme, Leipsic. We do not know of their having been translated into English.—ED. L.

THE LAW FUND.

TRUSTEES: THE PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, THE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND, AND THE MASTER OF THE SOCIETY OF APOTHECARIES OF LONDON.

The following additional subscriptions have been received by Dr. Paramore, 2, Gordon-square, W.C.:—Dr. William Craig, £1 1*s.* Mr. James Blaney, 10*s.* 6*d.*; H. S. C., 2*s.*; R. T. N., 2*s.* 6*d.*; Dr. Morton Burnett, 2*s.* 6*d.*

At the meeting to be held at the Holborn Restaurant on August, 1902, to present to Dr. Law the results of this subscription the chair will be taken at 5 P.M.

"COCOA POWDER."

REFERRING to our analytical notice in THE LANCET of July 26th, 1902, of a cocoa powder for which they are agents, Messrs. de Beer Brothers and Co., of 28, Minories, London, E.C., represent to us that the amount of fat found—viz., 34·80 per cent.—is excessive. We cannot find any inaccuracy in the result, but may add that in a subsequent sample sent to us the amount of fat found was 29·70 per cent. The quantity of fat in prepared cocoas varies between these figures according to our experience.

SANATORIUMS FOR PHTHISICAL PATIENTS.

To the Editors of THE LANCET.

SIRS,—I should feel obliged if any of your readers could inform me of any open-air sanatorium for the treatment of phthisis where a man 40 years of age, could be taken in free or for payment of a small fee. He is not able to afford much, but I imagine would have a good chance of being cured were he placed under better conditions. Thanking you in anticipation,

I remain, Sirs, yours faithfully,

W. EWART MAW.

86, Carlton-vale, Maida-vale, N W., August 16th, 1902.

MOUSTACHES AND KISSING.

To the Editors of THE LANCET.

SIRS,—May I ask your advice? Is it not a recognised fact that a moustache is nature's filter of the atmosphere before it passes through the mouth to the lungs and that it absorbs and retains large quantities of noxious microbes and disease germs? I take it that this is so and

that under the microscope it presents anything but an attractive group of animalculæ. In these circumstances is it not more than probable that in the case of a man with a moustache imprinting a kiss on the lips of another person there is great danger that he might at the same time implant the seeds of disease and perhaps death? My object for asking these questions is that I have several children and my moustached friends are in the habit of kissing them on the lips. Should I be justified on sanitary grounds in requesting them to desist?

I am, Sirs, yours faithfully,

August 18th, 1902. PATER.

*** Kissing on the lips is to be avoided. A moustache is not the completely insanitary appendage that our correspondent thinks.—ED. L.

BACTERIOLOGICAL TECHNIQUE.

To the Editors of THE LANCET.

SIRS,—I shall be glad to know if it is the usual custom in bacteriological laboratories to put Petri dishes after inoculation into a sterilised "Foster's box" which is incubated with them *in situ*.

I am, Sirs, yours faithfully,

August 17th, 1902. MICROBE.

*** Though the methods of each laboratory differ considerably, yet, so far as our experience goes, it is certainly *not* the custom to use a "Foster's box." We know of no laboratory in London where such a plan is "customary," the Petri dishes being placed in the incubator without any special sterilised box.—ED. L.

Zero.—The details are not quite clear. (*a*) If the discharge was for one month—"discharged on trial for one month"—the patient would still be under the jurisdiction of the Commissioners in Lunacy and removeable to the asylum within that period; (*b*) if discharged simply to the care of relatives—i.e., not "on trial"—the jurisdiction ceases *ipso facto* and he is thenceforth as any ordinary citizen. There is therefore nothing necessary "to establish his *status quo ante*" legally, it is established automatically and at once. The data given in our correspondent's communication as to "the proprietor" are obscure. The term should be "medical superintendent."

Puzzled.—The question is a legal one; it is impossible to say what view a County Court Judge might take. Our correspondent is advised to consult a trustworthy solicitor.

Equity.—Will our correspondent kindly forward us his name and address?

G. L. A.—Our correspondent must consult his usual medical attendant.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.) St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (30th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (25th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—3.30 P.M. Dr. Russell: Demonstration in Medical Wards.

TUESDAY (26th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—5 P.M. Lecture:—Dr. Ball: Throat Cases.

WEDNESDAY (27th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Lecture:—Mr. Eccles: Hydrocele.

THURSDAY (28th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—4.30 P.M. Mr. Paget: Demonstration in Surgical Wards.

FRIDAY (29th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—4.30 P.M. Lecture:—Dr. Abraham: Skin Cases.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

***Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.**

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1902, which was completed with the issue of June 28th, and the Title-page to the Volume, were given in THE LANCET of July 5th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1902 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 21st, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 15	29·97	SSE	...	110	73	60	60	62	Overcast
" 16	29·84	W.	...	117	80	55	58	62	Cloudy
" 17	29·72	S.E.	0·05	80	75	61	59	61	Cloudy
" 18	29·78	S.W	0·70	81	66	61	62	65	Cloudy
" 19	29·66	W.	1·00	116	74	60	61	63	Cloudy
" 20	29·85	S.W.	0·11	113	71	54	54	57	Cloudy
" 21	30·05	N.W.	...	107	69	55	54	59	Cloudy

During the week marked copies of the following newspapers have been received:—*Revista Medica de S. Paulo, Macclesfield Courier, Glasgow Evening News, Blackpool Herald, Airdrie and Coatbridge Advertiser, Oban Times and Argyllshire Advertiser, Burton Chronicle, Dundee Advertiser, Lincolnshire Advertiser, Bolton Chronicle, Kent Messenger, Middlesbrough Gazette, Aberdeen Press, Western Daily Mercury, Yorkshire Post, Wiltshire Mirror, Morning Post, Newcastle Journal, Hereford Mercury, Brighton Gazette, Kent Examiner, Daily Chronicle, Surrey Advertiser, Bristol Mercury, Dublin Express, Times of India, Bradford Observer, Daily Graphic, Huddersfield Examiner, Sanitary Record, Local Government Chronicle, &c.*

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Z. Dr. Zlotowski, Rustchuk; Zero.

Letters, each with enclosure, are also acknowledged from—

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Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

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